

# *the* Appendix



**BODIES**

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Editor-in-Chief

Benjamin Breen

Managing Editor

Felipe Fernandes Cruz

Editors

Christopher Heaney

Amy Kohout

Publisher

Brian Jones

Contributors

Elaine Ayers

Benjamin Breen

Kevin Cannon

Joyce Chaplin

Mari Crabtree

Felipe Fernandes Cruz

Ryan Edwards

Alex Golub

Christopher Heaney

Lindsay Keiter

Jed McGowan

Diarmid Mogg

Rachel N. Ponce

Lydia Pyne

Linda Rodriguez

Cassia Paigen Roth

Claire Schwartz

Blake Smith

Sean Trainor

Matthew Willis

Rebecca Woods

Contributing Editor

Lydia Pine

Copy Editors

J.R. Jones

Andrea Kinnison

Shannon Nagy

Design and Layout

Benjamin Breen

Brian Jones

Illustrations

Benjamin Breen

Production Assistant

John Watson

Founders

Benjamin Breen

Felipe Fernandes Cruz

Christopher Heaney

Brian Jones

The Appendix

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*The Appendix* is a quarterly journal of experimental and narrative history; though at times outlandish, everything in its pages is as true as the sources allow. *The Appendix* solicits articles from historians, writers, and artists committed to good storytelling, with an eye for the strange and a suspicion of both jargon and traditional histories. A creature of the web, its format takes advantage of the flexibility of hyper-text and modern web presentation techniques to experiment with and explore the process and method of writing history.

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## Contributors

Elaine Ayers is a PhD candidate in the Program in the History of Science at Princeton University.

Benjamin Breen is the editor-in-chief of *The Appendix* and a PhD candidate in history at the University of Texas at Austin.

Kevin Cannon is a cartoonist and illustrator from Minneapolis, Minnesota. His most recent graphic novel is *Crater XV* (Top Shelf, 2013).

Joyce Chaplin is the James Duncan Phillips Professor of Early American History at Harvard University.

Mari Crabtree is a PhD candidate in History at Cornell University, and she will be an assistant professor of African American Studies at the College of Charleston starting in the fall of 2014.

Felipe Fernandes Cruz is Managing Editor and co-founder of *The Appendix*, and a PhD candidate in history at the University of Texas at Austin.

Ryan Edwards is a PhD candidate in history at Cornell University.

Alex Golub is an assistant professor of anthropology at the University of Hawaii at Manoa.

Christopher Heaney is a co-founder and editor of *The Appendix*, a PhD candidate in history at the University of Texas at Austin, and the author of *Cradle of Gold*.

Lindsay Keiter is a PhD candidate in Early American History at the College of William & Mary.

Jed McGowan is a Los Angeles-based artist and writer.

Diarmid Mogg is a writer and parliamentary reporter in Edinburgh, Scotland.

Rachel N. Ponce is a recovering academic and an evangelist for digital games in education.

Lydia Pyne is a writer and historian based in Austin, TX and a contributing editor at *The Appendix*.

Linda Rodriguez is a Postdoctoral Fellow at New York University.

Cassia Paigen Roth is a PhD candidate in History at the University of Los Angeles, California.

Claire Schwartz is a PhD student in African American Studies and American Studies.

Blake Smith is a PhD student at Northwestern University.

Sean Trainor is a Ph.D. Candidate in History and Women's Studies at Penn State University and a dissertation fellow at the McNeil Center for Early American Studies at the University of Pennsylvania.

Matthew Willis is the author of the historical nautical fantasy "*Daedalus and the Deep*", and received an MA in History and Cultural Studies in Science from the University of Kent for a thesis on Joseph Conrad.

Rebecca Woods is a postdoctoral fellow in the Society of Fellows in the Humanities at Columbia University.

**Cover Image:** NASA's Cassini spacecraft created this false-color image of Saturn's north polar storm with a breadth more than 20 times larger than a typical terrestrial hurricane.

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#### **A note on citations:**

For reasons of readability and space, this edition includes only select footnotes and citations. The online version of this issue includes complete citation records for each article at:

<http://theappendix.net/issues/2014/04>

CHAPTER ONE:

# Human Bodies





Leonid Rogozov removes his own appendix—"the cursed appendage"—in Antarctica, 1961.  
Wikimedia Commons

## Letter from the Editors: Issue Six: Bodies

In April of 1961, a twenty-seven year-old surgeon named Leonid Rogozov took a scalpel and sliced open his own abdomen, watching, in a mirror, to make sure that his hand didn't slip and damage the organs inside. He and eleven other Russians were in Antarctica, in a base beyond the help of any other doctors, and Leonid had been feeling sick for days. It was appendicitis, he had realized, and he needed to operate on himself before that strange, vestigial organ—otherwise ignored—ruptured. Reclining on the operating table, dressed in both surgical mask and patient's smock, doctor and doctored, he rummaged about in his insides, without gloves, feeling for the inflamed organ, growing weaker and weaker.

"Finally, here it is, the cursed appendage!" he later wrote in his journal.

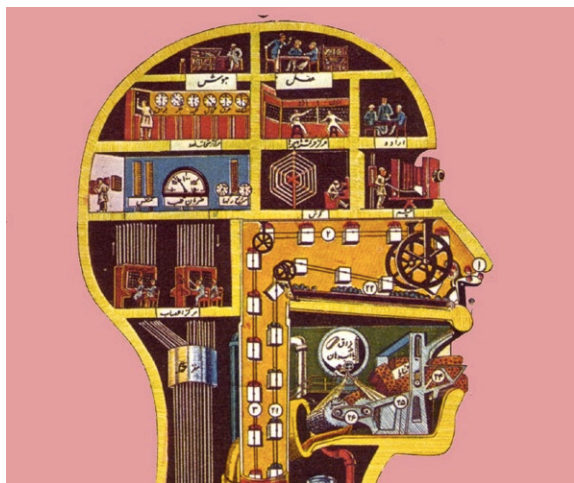
With horror I notice the dark stain at its base. That means just a day longer and it would have burst ... At the worst moment of removing the appendix I flagged: my heart seized up and noticeably slowed; my hands felt like rubber. Well, I thought it's going to end badly.

It didn't. Rogozov successfully excised his appendix, lived on, and died in 2000. His journal got a nice swell of attention a few years later, after an article about his auto-appendectomy co-written by his son, Vladislav, appeared in the *British Medical Journal*. We at *The Appendix* have avoided writing about Leonid's lost organ until now for obvious reasons—a little too on the nose, yes—but also because we were saving it for this, our long-planned sixth issue, 'Bodies.'

With apologies to Raymond Carver: what do we talk about when we talk about history? Politics? Religion? Economics? Culture? But what about that bright sharp knife pressed—cold, hard—into our own warm skin, and the blood that wells up after?

It is very easy for history to untether and float away into abstractions; but it is far harder for it to do so when we remember that history, no matter what, happens to bodies. Not just our own, but those of others, and indeed of other species, bodies of water, planetary bodies, and so on. History itself is a body of knowledge. There's abstraction here too, but it's a useful abstraction. It suggests the connectedness of the body being considered: its ability to be born, live, and change. Its sensitivity to foreign objects, and the complexity of the organs it contains—ignored organs, sometimes, that might just go corrupt and provoke the death of the body entire.

Bodies. We have them, and we see and make them everywhere we go. As much as we try and divide, and distinguish, we ultimately come back to the core fact that all of us have a heart that, for some short spell of eternity, will pump blood out over our skin and into the world.



A Persian version of Fritz Kahn's famous "Man as Industrial Palace" image from 1967.  
Machinatorium

## Chapter One: Human Bodies

Bodies in the world of classical antiquity, writes Peter Brown, were "little fiery universes, through whose heart, brain and veins there pulsed the same heat and vital spirit as glowed in the stars." The microcosm of the human frame mirrored the macrocosm of the universe. But this tidy of the conception of the body hides the complexity of what it means to be a physical being: as the eight pieces in chapter one of this issue explore, every human culture and epoch has embodied itself in different ways, from preserved hearts to barbered beards, and from Panamanian blood-letting to Pennsylvania mugshots, scurvy sailors, and early modern apothecaries.



## Chapter Two: Bodies on Display

When the South Asian ruler Tipu Sultan commissioned a pipe organ in the shape of a tiger mauling an Englishman, what precisely was he doing? That's the question posed in "Robot of Jihad," but it also informs the other pieces in this chapter. From extinct species given new life to the cuts of meat in an icebox and the skulls in a museum, bodies on display speak a language of their own. They can be assertions of will, or threats of violence. And the memory of their display often outlives the bodies themselves.

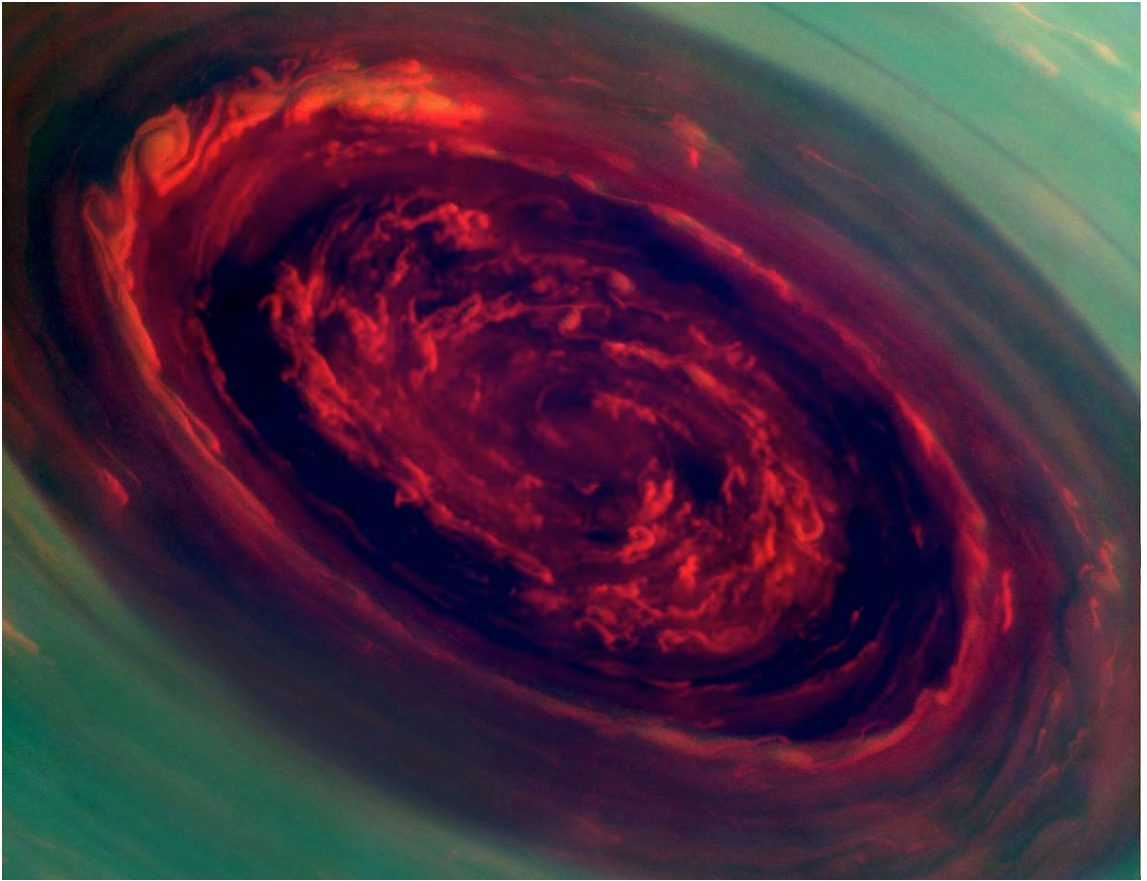


## Chapter Three: Foreign Bodies

Bodies, by their very nature, occupy a liminal space between the inner world of the mind and the external cosmos. They are gatekeepers, fighting off fevers, negotiating linkages between mother and child, or transmitting the sensory world to the brain. Yet there are other kinds of foreign bodies: in the realm of religion, we envision mystical resonances between bodies at a distance, and in bodies of water we search for unfamiliar creatures. Beyond our sublunary sphere, cosmic bodies survey it all, forever out of reach.







A recent NASA image of a storm on Saturn.  
NASA

“What it is like to be a human being, or a bat, or a Martian?” the philosopher Thomas Nagel famously asked in 1974. His conclusion? Every experience of selfhood is based on “facts that embody a particular point of view.” To have a body, to inhabit it, to experience reality through it, is the core of our consciousness—what makes an experience *ours*, and not someone else’s. Our bodies both instruct and construct us.

Here’s hoping that the body of work in this issue does the same.

**Your Appendix editors,**

Benjamin Breen

Felipe Cruz

Christopher Heaney

Brian Jones

Amy Kohout

Lydia Pyne





## Mug Shots: A Small Town Noir

by Diarmid Mogg



artin Fobes woke up to the sound of officers from the New Castle police department banging on his front door.

It was early on a January morning, still dark, and he was lying flat on his living room floor, where he had passed out a few hours previously. The police took him downtown and charged him with driving while intoxicated. They sat him in a chair against a white wall and slotted numbered tiles into a board behind him, to record the fact that he was the four thousand eight hundred and eighty-third person to have been processed in that room. They took a picture of his profile, then turned him to take a

picture face-on. While he was held for questioning, the negatives were developed and printed on a small piece of photographic paper that had been cut with scissors from a larger sheet. The print was then taken to a room in police headquarters known as the rogues gallery, where it joined the ever-growing archive of twinned portraits of citizens unfortunate enough to have been caught breaking the law in Lawrence County, Pennsylvania.

Sixty-one years later, the photograph dropped through my letterbox in Edinburgh, Scotland, in an envelope containing half a dozen old mug shots

that I'd bought for a few pounds from an eBay seller who specialized in historic ephemera.

I'd become interested in mug shots through a book called *Least Wanted*, by Mark Michelson, which contains hundreds of these strange and beautiful little portraits, taken as a matter of routine by law enforcement agencies across America but made haunting by the passage of time. I was fascinated by the range of expressions, the haircuts, the clothes. Such faces. Who were they? What had they done? What were their lives like?

Almost all of the pictures in *Least Wanted* are anonymous, having become separated from their arrest information due to the carelessness of police departments, dealers, and collectors. Part of the reason why I bought the bundle from eBay was that the listing noted that they still had their police file cards attached, and I hoped it might be possible to use that information to find out more about the people in the photographs.

Each of the six cards listed various pieces of information, including, importantly, the person's name and age, the crime with which they had been charged and the date and place of their arrest. All six people were from the same town: New Castle, Pennsylvania, a place I'd never heard of. I checked NewspaperArchive.com and saw that its database contained back issues of the local paper, the *New Castle News*, going back over a hundred years. A promising omen.

Martin's mug shot was on top of the pile, so I ran a search on him first. His name appeared in the paper about thirty times over fifty years, from the announcement of the birth of his daughter in 1929 to his obituary in 1969. Most of the mentions were in the paper's local events pages, where he appeared among lists of routine hospital admissions or as a pallbearer at the funerals of friends and relations—commonplace traces of a normal life.

The articles that came up for the month of his arrest, however, were a different matter: two front-page stories in one week, headlined,



Martin Fobes  
Diarmid Mogg

CRIME		Intox Driver		NAME	Martin E Fobes	FILE NO.	4883
VOCATION							
ALIAS							
F. P. C.		(15) 1 aR 9					
		1 aA 8					
DATE ARRESTED		PLACE		CRIME			
Jan-8-1948,		New Castle Pa,		Intox Driver			
AGE	39	HEIGHT	5-7				
WEIGHT	200	HAIR	Brown				
EYES	Blue	BUILD	Med				
COMPLEXION	Fair	NATIONALITY	American				
CRIME	NAME		FILE NO.				
Intox Driver,		Martin E Fobes,			4883		

The arrest card of Martin Fobes.  
Diarmid Mogg

“Officers Probe Woman’s Death” and “Cause Of Girl’s Death Is Mystery.” I hope I can be forgiven for feeling a thrill of excitement as I scanned the pieces and saw Martin’s name emerge as part of a far more intriguing story than I’d been expecting. An unconscious eighteen-year-old girl named Anna Grace Robertson had been found lying in the middle of the street, battered and bleeding, in a residential part of town on the morning of 6 January, 1948. The police who woke Martin up from his drunken sleep and took his mug shot told him he had been seen with her that night. Martin said he remembered leaving the Rex Café with her and her sister sometime after midnight, but nothing after that. He had no recollection of how he ended up back home. He had blacked out. He didn’t know what had happened to the girl.

Anna Grace never regained consciousness. She died three days later, after being admitted to the hospital. A post-mortem found the cause of death to be hemorrhages of the brain. She also had a complete fracture of the left jaw, partial paralysis of the left arm and left leg, and friction burns on her face and right knee.

At the inquest, Martin said, again, that he had no recollection of what had happened that night. Others filled in some of the blanks.

Anna Grace’s sister, Eris, said that Martin had taken her and Anna Grace home from the Rex Café, where they had met him. Anna Grace knew Martin, it seemed, but Eris had never seen him before. When they got to the house, instead of coming in with Eris, Anna Grace went off with Martin. They said that they were going to a café called Jim’s Place on the east side, and were then going to the Square Deal café to meet Anna Grace’s mother, who worked there. It was half past midnight.

The bartender of the Rex Café, William Weidenhof, had gone over to the Square Deal after closing up his place, and saw Martin and Anna Grace there. Martin was drunk, and kept asking Anna Grace to leave with him. Eventually, just before two, Weidenhof saw Martin take Anna Grace’s arm and lead her to his truck.

About twenty minutes later, a man called Louis Smith found Anna Grace lying in North Mercer

street, unconscious, with a bloody nose and a bruise on her forehead. He called the police, and an officer took her to the hospital.

People who had met Martin in town the next night, back in the Rex Café again, told the inquest that he seemed “pretty well loaded” and had scratches on his face. A friend of Martin’s, Joseph McKee, asked him if he knew what had happened to Anna Grace, but Martin ducked the question, saying only that he had been in a wreck at the harbor at about half past four in the morning, but that everything was “on the up and up.” Later that evening, he passed out in the bar.

At the end of the inquest, the members declared that they were unable to determine how Anna Grace sustained the injuries that caused her death and recommended further investigation. There was none. Anna Grace had already been buried, the witnesses had said all that they could and Martin Fobes wasn’t saying anything else. The case appears to have been dropped. The paper doesn’t mention it, or Anna Grace, again after that day. Martin was charged only with leaving the scene of a crime.

No one seems to have been certain what happened in the missing twenty minutes between Martin and Anna Grace leaving the Square Deal and Louis Smith finding her in the street. Anna Grace’s injuries suggest that she jumped from Martin’s speeding truck, but why did she jump? The most likely scenario would seem to be that Martin made a move on her as they drove through town, they struggled (which would be when his face was scratched) and she jumped from the truck to escape. That must have been obvious to anyone involved in the case but, if it occurred to the inquest’s members—all men—they chose not to pursue it. Perhaps it struck them as just a tragic accident, and not the kind of thing over which they should ruin the life of a hard-working family man.

I realized, of course, that it was impossible to say for sure how culpable Martin was, and also—at this date—quite unnecessary to try. The story itself was enough for me. I wrote it up and posted it online. It was the start of a project that would end up occupying all of my creative energy for years

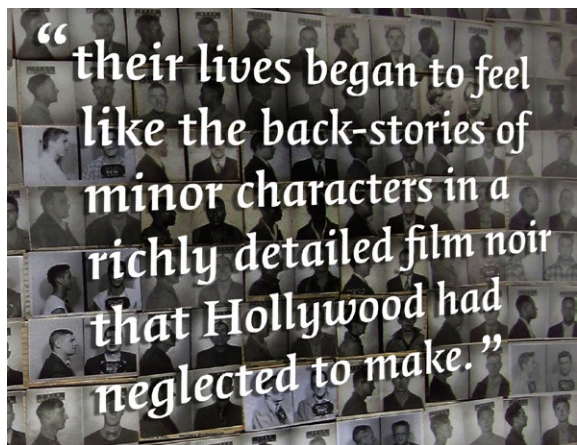


to come, in the form of a website called Small Town Noir (<http://smalltownnoir.com>), which has evolved into an attempt to chronicle the history of one small American town through the criminal records of its citizens.

None of the other mug shots in the bundle matched Martin's for dramatic incident, but I researched the subjects' lives as fully as I could, with a growing sense that I'd stumbled on something unique and valuable. By the time I was done, I'd uncovered a good few compelling stories and read an awful lot of old copies of the *New Castle News*—enough to make me feel that I'd perhaps caught a glimpse of something that might be more interesting than the stories themselves: the town in which they took place.



Like me, you've probably never heard of New Castle. It sits midway between Lake Erie and Pittsburgh, over by the Ohio border. It was founded after the Revolutionary War, in a valley that had been settled by the Lenape people, before they were forced out. Its growth was phenomenal. In the 1890s, its population increased by 144 per cent, faster than any other town in the country. By the turn of the century, it was one of the most industrially productive cities in America, with the biggest tinplate mill in the world and thousands of immigrants from Europe arriving every year to work in its steel factories, ceramics plants, foundries and paper mills.



Katie Payne, arrested for "felonious cutting."  
Diarmid Mogg

All that's gone now, of course. The Great Depression hit it hard, and the disastrous collapse of industry in the Northeast in the latter half of the century all but finished it off. Its present population is around 23,000, down from a wartime peak of nearly 50,000. You can imagine what the depopulated parts of town look like these days.

Yet something about New Castle captured my imagination. The place names—Locust Street, Croton Avenue, Shenango, Neshannock—were powerfully evocative of a certain idea of America, although one that, in all honesty, probably exists only in the minds of Europeans like me, whose imaginations have been shaped by a love of B-movies, pulp novels and old crime stories. None of the people in the photographs would have looked out of place working in Robert Mitchum's garage in *Out of the Past* or hiding out in the boarding house where Burt Lancaster is murdered in *The Killers*. The more I learned about their world, the more their lives began to feel like the back-stories of minor characters in a richly detailed film noir that Hollywood had somehow neglected to make.

There were more New Castle mug shots on eBay, all from the decades between 1930 and 1960, and I bought as many as I could. The pictures had ended up all over the world—San Francisco, Tokyo, even a small island off the coast of Scotland. I always asked the seller how they had originally



come by the pictures. The usual answer was that they'd bought them from other collectors. No one knew for sure how the photographs had first ended up for sale, but I gradually worked out that, sometime in the 1990s, the police department had cleared out its files and thrown hundreds—maybe thousands—of old photographs in the trash. A few hundred images were surreptitiously saved from destruction by a police officer nearing retirement.

The ones he picked up happened to come from the middle decades of the century. If he had passed by earlier, he might have come away with a selection from around the First World War. Later, and he might not have found any at all.



My collection grew over the next few years. Each batch—still carrying the strong smell of the cigarettes smoked by New Castle detectives over the years—brought to light wonderful characters: a quarry worker who was arrested after losing his false teeth at a crime scene; a prohibition agent whose house was dynamited by bootleggers; an upstanding poultry fancier who turned bank robber; immigrant families; civil war veterans; local capitalists; and a lot of drunks. And each research expedition into the archives of the *New Castle News* revealed more about the town and its history.

During the period I was interested in, the *New Castle News* was one of those local newspapers that aimed to provide an indispensable daily record of the comings and goings in the communities that they served, along with a couple of pages of national and international news and opinion from the wire agencies.



Naturally, it reported on local politics and social events to an exhaustive degree. (It regularly included, for example, full descriptions of services in the town's churches and synagogues.) Mixed in with those stories, however, are small impressions of everyday life that it's hard to imagine finding in any other source. A few examples:

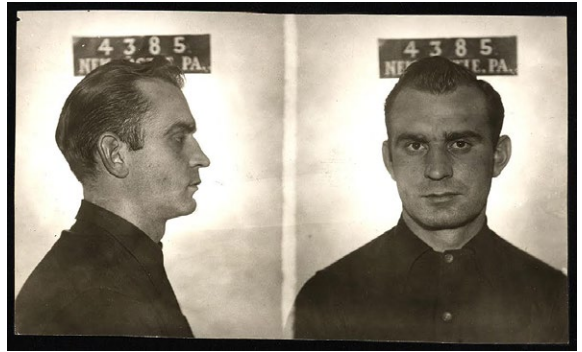
Over the week-end a couple of strange sights were seen on the streets of New Castle. One: a man was noticed mowing his lawn long after darkness had surrounded him. The other was a young girl running in the midst of a heavy downpour of rain with an unopened umbrella under her arm. (May 4, 1936)

Pa Newc saw a rather odd sight in the seventh ward yesterday. A man was driving a car which had a sign labelled 'Funeral' fastened on the wind-shield while fastened on the back end of the car was a trailer which had a large quantity of sheep's wool loaded on it. (September 24, 1924)

The mystery of who it was who put the pigeons in one of the court house desks is still unsolved. The act is denied by all. (January 7, 1930)

Those details are gold, to me, and I make sure to include as many of them as I can when I write up the stories of the people in the mug shots. The fact that, on the night in 1943 when a man named Frank Heckathorn was arrested for indecent exposure, posses of youths were searching the town's cemeteries for signs of a supposed half-man, half-beast mutant that they believed had been spotted waddling menacingly in the area strikes me as being just as relevant to the story as the country's import/export balance for the year or what Patton was doing in North Africa.

What's more, including that day-to-day perspective reduces the focus on crime. New Castle wasn't a particularly crime-ridden place. And, although my point of entry into the townspeople's lives is always, unavoidably, a criminal act that they'd been charged with, the majority of them couldn't be described as criminals. They were ordinary people, by and large. Like Charles Cialella.



Diarmid Mogg

Charles played football for New Castle High and worked for his family's florist business until he joined the Army Air Service, immediately after the attack on Pearl harbor. Two months after the end of the war, he was arrested for playing a numbers game. His mug shot was taken and put on file, but he was released without being charged.

He went to work with New Castle's parks department and became supervisor of the Cascade Park swimming pool when it reopened in 1952, offering a pledge that, following a program of improvements, it would now be impossible for bathers to contract skin diseases or sinus trouble through use of the facility.

In 1968, Charles's cousin, Carl, became mayor and appointed Charles superintendent of all the city's parks. By the seventies, the administration had changed and Charles was made foreman of the city's sewers. In 1976, he was working in a sewer in Winter Avenue when he found a 1942 class ring inscribed with the initials MAS hanging on a broken tree branch. He called New Castle High, whose staff checked their records and told him that it must have belonged to Mary Agnes Schetrom. Charles's friend, Frank Gagliardo, had been the Schetrom's paper boy and still knew some friends of the family, who told Charles that Mary Agnes was living on Kenneth street. Two hours after he had found the ring, Charles returned it to Mary Agnes, who told him she had accidentally dropped it down her toilet thirty years earlier and had not expected to see it again.

Charles was a Republican committeeman and president of the local lodge of the Sons of Italy. He played golf, went bowling and raised funds



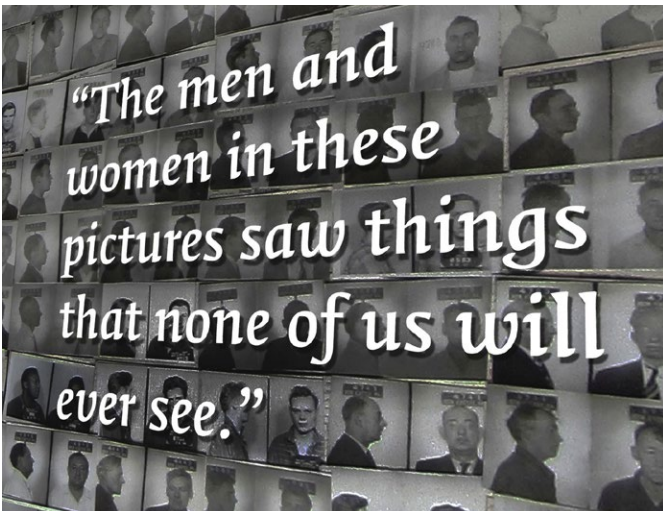
New Castle today.  
Diarmid Mogg

for charity. His wife bred exotic plants and worked as an Avon representative for fifty years. They raised five children and were both over eighty when they died.

Ordinary people.

Since I started researching and publishing the stories behind the mug shots on the Small Town Noir website, I've visited New Castle a couple of times, tracked down crime scenes, met relatives of the people I've written about—I've even attended the 95th birthday party of a man who had his mug shot taken at the age of seventeen, in 1935, when he was charged with stealing a car. (The return of his mug shot was my birthday gift to him.) Over those years, I've come to feel something like love for New Castle and the people whose lives I've tried to piece together.

The subjects of the mug shots were, for the most part, largely innocent of wrong-doing, aside from an occasional error of judgment or alcohol-induced indiscretion. They were citizens of a town—perhaps a nation—that was unaware it was experiencing its golden age. They worked in vast production lines. They shopped in crowded streets. They marched with their fraternal organizations to the music of faraway homelands. But they raised a generation of children who would grow up to find out that the place that had given their parents and grandparents everything they had in life was gone.



The steel mills have closed now, the downtown sidewalks are deserted. The men and women in these pictures saw things that none of us will ever see. All that we can do is look clearly at their faces, listen carefully to their stories and let them tell us what they can about their world, and what life was like in that long-gone town.



## The Beard That Wasn't: Abe Lincoln's Whiskers

by Sean Trainor

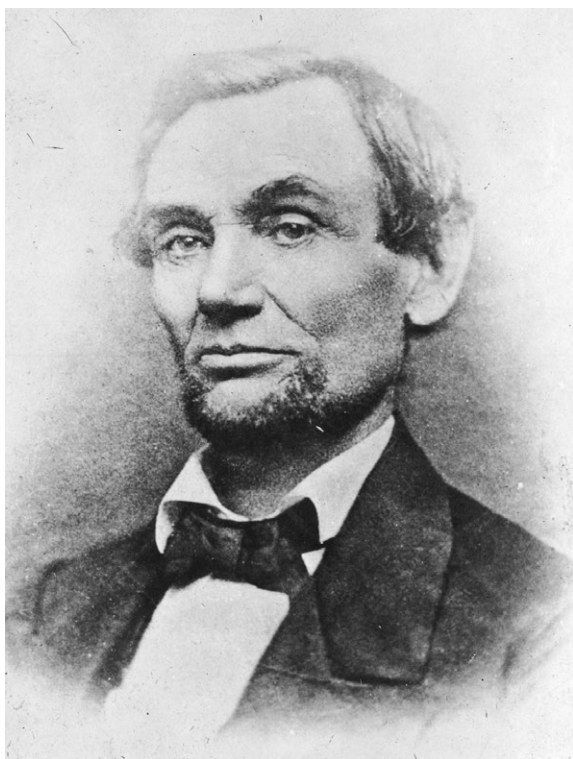
It's a familiar story. On October 18, 1860, the Hon. Abraham Lincoln of Springfield, Illinois—Republican nominee for President of the United States—received a letter from eleven-year-old Grace Bedell, of Westfield, New York. Though a confirmed Lincoln supporter herself, Bedell worried that others, including one or more of her brothers, might need convincing. As a remedy, she suggest-

ed the candidate grow facial hair. "[I]f you let your whiskers grow," Bedell told Lincoln, "I will try and get [my brothers] to vote for you." Sweetening the proposition, Bedell added that "all the ladies like whiskers and they would tease their husbands to vote for you and then you would be President." A bold child, Bedell closed by asking Lincoln to "answer this letter right off."



And so he did. Replying the following day, Lincoln thanked Bedell for her letter but questioned her advice. Having “never worn any” whiskers, Lincoln wondered, “do you not think people would call it a silly affect[at]ion if I were to begin it now?” Although Bedell did not respond, the future president resolved the question to his own satisfaction, commencing his life as a bewhiskered statesman in early November, shortly after sitting for his last clean-shaven portrait. By the fifteenth of that month, Lincoln’s facial hair was long enough to elicit comments. His friends, according to New York Herald writer Henry Villard, teased him for “putting on [h]airs.” Later than month, when Lincoln sat for Chicago photographer Samuel G. Alschuler, he wore the beginnings of a respectable goatee. And by February 1861, when Lincoln departed Illinois for the capital, he wore what modern Americans would call a ‘wreath beard.’

It was an extraordinary transformation. For the first and only time in American history, a president-elect dramatically changed his personal appearance between his election and inaugura-



The first image of Lincoln with whiskers. Photograph by Samuel G. Alschuler, Nov. 25, 1860.  
Library of Congress

tion. In the process, he rendered the vital visual paraphernalia of democratic politics—the prints, campaign pamphlets, and *cartes de visite* that cemented ties between politicians and the electorate—irrelevant. Why would Lincoln take such a potentially-alienating risk? What did facial hair do for Abraham Lincoln that being clean-shaven did not?

Lincoln’s army of biographers have offered a number of explanations. David Herbert Donald, for instance, suggested that Lincoln’s beard lent the president-elect “a more authoritative and elderly ... visage.” William C. Harris speculated that it was intended “to give his face a more dignified and mature look befitting a national leader.” And Harold Holzer—the most prolific authority on Lincoln’s beard—claimed that the president-elect grew his facial hair in an effort to discard his “image as frontier railsplitter,” thus transforming “Honest Abe into Father Abraham.” Lincoln’s beard, in other words, lent him patriarchal gravitas. In the face of widespread doubt about his ability to manage the secession crisis, the president-elect at least “looked up to the job.”<sup>1</sup>

There are only two problems with this argument. First, Lincoln didn’t have a beard. He had whiskers—an enormously important distinction in mid-nineteenth century America. And second, Lincoln’s whiskers didn’t signify maturity, statesmanship, or gravitas, but rather urbanity: civilized, metropolitan grace. They were more Beau Brummell than John Brown, intended and interpreted as a rebuttal to claims of rustic rudeness, rather than those of dithering impotence.

This is not to suggest that Lincoln’s whiskers were wholly without patriarchal connotations. Facial hair was in a state of symbolic flux at the outset

Though Brummel was neither bearded nor bewhiskered, I couldn’t resist the alliteration. No doubt a more accurate embodiment of hirsute elegance is the French Count d’Orsay who, beginning in the 1820s, did much to popularize whiskers.

of the Civil War—a state of affairs the savvy sixteenth president likely understood and exploited. But in the months between November 1860 and March 1861, Lincoln's whiskers were seen—first and foremost—as an effort at fashionable urbanity.



Imagine yourself in Lincoln's enormous shoes. You are a tall, gangly man with lantern cheeks, elephantine ears, and asymmetrical lips—an ugly drink of water, even by the standards of an unsightly era in men's appearance.

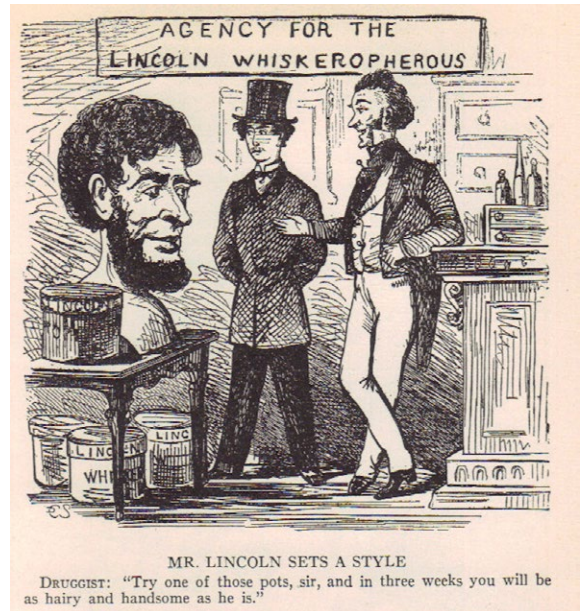
It is December 1860. You have just been elected President of the United States. Politicians in South Carolina are openly threatening to leave the Union. There are dire rumblings throughout the Deep South. In your worst nightmares, you imagine Missouri and Kentucky—even Maryland and Delaware—severing their ties to the government in Washington. Disunion, civil war, bloodshed on land and sea—these are suddenly real and present dangers.

And the worst part? Nothing in your experience—not your time in the Illinois state legislature, your unsuccessful bid for the U.S. Senate, your single term in the U.S. House of Representatives, even your log cabin childhood or your career as a frontier lawyer—nothing has prepared you for the job you're about to assume.

So what are you going to do? Are you going to follow the stern example of President Andrew Jackson, who, during an earlier moment of secessionist panic, reportedly threatened to hang the first rebel he could get his hands on from the first tree he could find?

No. You are going to grow whiskers. And to further inspire awe in your opponents, you are going to tell everyone that you did so on the advice of an eleven-year-old girl.

This is the argument that some of the finest, most-careful of Lincoln's many biographers have made about his whiskers. And, strange as it is, their argument rings true because it corresponds with our image of Lincoln as the Alpha and Ome-



Political cartoonists had a field day with the President's new visage.  
*Vanity Fair*, February, 1861

ga of American civic religion: a marble man of strength and wisdom.

But in the months before his inauguration, Lincoln was anything but Abrahamic—let alone Christ-like. An untested rube who won a mere forty-percent of the popular vote in the 1860 election, Lincoln was widely believed to lack the experience and authority that the secession crisis demanded. Why, then, was he at such pains to emphasize Grace Bedell's role in his changed appearance? Why did he make a point of stopping in Bedell's tiny hometown of Westfield, New York—explaining to the assembled crowd that “it was partly on her advice that he ... let his whiskers grow”? Why, in full view of some of the country's leading journalists, would he step down from his Washington-bound train and greet his correspondent with a much-publicized kiss?

As political theater, the incident was inspired. It demonstrated Lincoln's attentiveness to correspondence, his concern for the disenfranchised, and his fatherly tenderness—all esteemed virtues in the nineteenth-century United States. But while



the Bedell story may have provided a laudably paternal explanation for Lincoln's decision to grow a beard, the choice hardly resounded with patriarchal authority. Little about the incident suggested Abrahamic fortitude. Among a number of commentators, in fact, the Bedell story actually served to undermine his gravitas. A New York *Herald* writer, for instance, characterized Bedell's letter as "foolish" and denounced Lincoln's behavior as "beneath the dignity of the office to which he has been elected." Contrasting Lincoln with Confederate president Jefferson Davis, the *Herald* writer found the former wanting. Unlike Lincoln, Davis had traveled from Mississippi to Alabama without having "told any stories, cracked any jokes, [or] asked the advice of the young women about his whiskers."

He was not without alternative explanations for his changed appearance. In October 1860, a group of die-hard Republicans wrote to their candidate in a state of distress. After carefully considering the daguerreotype images of Lincoln they wore on their lapels, they arrived at "the candid determination" that he would be "improved in appearance, provided you would cultivate whiskers." Earnest supplicants, the 'True Republicans,' as they called themselves, testified to Lincoln's power in a way that Bedell's precocious familiarity did not. If Lincoln had wanted to portray himself as a master of men, this surely would have offered a more flattering explanation for his decision. But instead he singled out Bedell. Clearly, then, Lincoln's whiskers—and the story he told about them—were intended to communicate something other than Abrahamic authority.



What Lincoln's facial hair was meant to convey becomes clearer when we consider the language that the president-elect and his contemporaries used to describe it. While we moderns presume to call Lincoln's facial hair a beard—"the most famous beard in the history of the world," according to *The New York Times*' Adam Goodheart—Civil War-era Americans would have recognized the president-elect's facial hair for what it was: a fine set of whiskers. In fact, a thorough search of a leading digital newspaper database reveals that between November 1860 and March 1861, only two of doz-

ens of commentators used the word 'beard' to describe Lincoln's appearance.

This was not coincidental. The words 'beard' and 'whiskers' connoted distinctive styles in mid-nineteenth century America—and contemporaries used the words differently than we do. The word 'whiskers' typically referred not only to bushy cheek growths—to massive sideburns and muttonchops, as it does in the present—but to what we would call a 'wreath beard' as well: to facial hair configurations that met beneath the jaw. Edgar Allan Poe, for example, described one fellow writer as having "[t]hick whiskers meeting under the chin," and another whose "hair and whiskers are dark, the latter meeting voluminously beneath the chin." One might even use the word whisker to refer to what we would call a moustache. Writer Edward L. Carey, for instance, referred to a character with a "whisker on [his] upper lip" in a story entitled "The Young Artist."

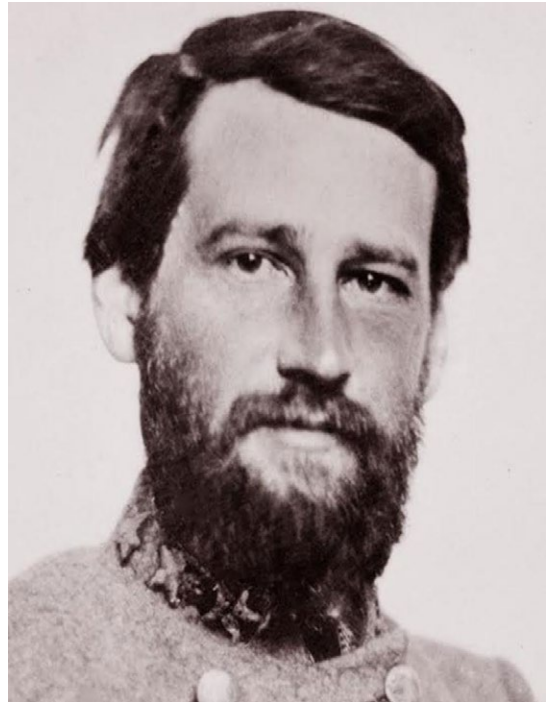
'Beards,' on the other hand, were more unruly affairs. In an article in the *American Phrenological Journal* entitled "Wearing the Beard," for instance, the anonymous F.W.E. instructed beard-wearers that, contrary to the practice of bewhiskered men, "Thou shalt not cut it off at all, but let it grow. Let it grow, all of it, as long as it will." What often distinguished beards from whiskers, then, was neither facial real-estate nor the length of one's hair—one might wear a short, untamed beard-in-the-making or a long, carefully-sculpted set of whiskers—but

Here's how I did it. Using the word-searchable digital database *America's Historical Newspapers* (a standard source for scholars of eighteenth and nineteenth-century America, which contains digitized versions of thousands of the newspapers in the collection of the American Antiquarian Society in Worcester, Massachusetts), I entered the search terms 'abraham lincoln whiskers' and 'abraham lincoln beard,' limiting both searches to the years 1859 through 1861, and permitting only those results categorized as 'news/opinion.' While the former search returned 148 results compared to a mere 33 for the latter, it soon became clear that, in the overwhelming majority of cases, the optical character recognition software had mistaken 'heard' or 'board' for 'beard.' As a result, fewer than ten of the 148 results actually deal with facial hair, and, of these, only two with Lincoln's. It's also clear from the contents of these two articles that neither of their authors had actually seen Lincoln's facial hair in person. Of the 33 results for 'abraham lincoln whiskers,' on the other hand, 16 refer to specifically to Lincoln's appearance.

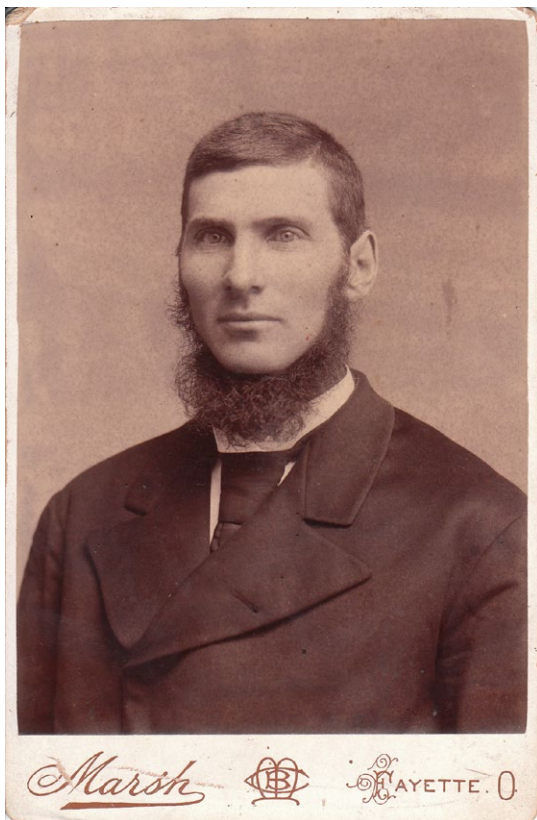
rather one's relationship to the work of men's grooming. Hairy men who continued to visit the barber, trim their mustaches, or wax their locks wore whiskers; men who let their facial hair grow unrestrained sported beards.

A survey of these words in the pages of *Godey's Lady's Book*—antebellum America's best-selling periodical—indicates why the distinction mattered. While whiskers appeared on the faces of European noblemen, professional military men, and dashing young dandies, beards were most closely associated with Biblical patriarchs, unkempt gold prospectors, and messianic radicals.

One can of course find exceptions to this rule: period fiction, for instance, includes occasional references to refined men with short beards and boorish brutes with long whiskers. This is a matter of *connotation* not *definition*. Still, on the whole, mid-century commentators showed a consistent tendency to use the terms in the way described above.



Confederate general S. D. Lee, whom the *Columbian Register* of New Haven, Connecticut described as having "light hair and whiskers."  
Wikimedia Commons



A neck-bearded (neck-whiskered?) young man photographed in 1888 by C. Burr Marsh.  
Wikimedia Commons

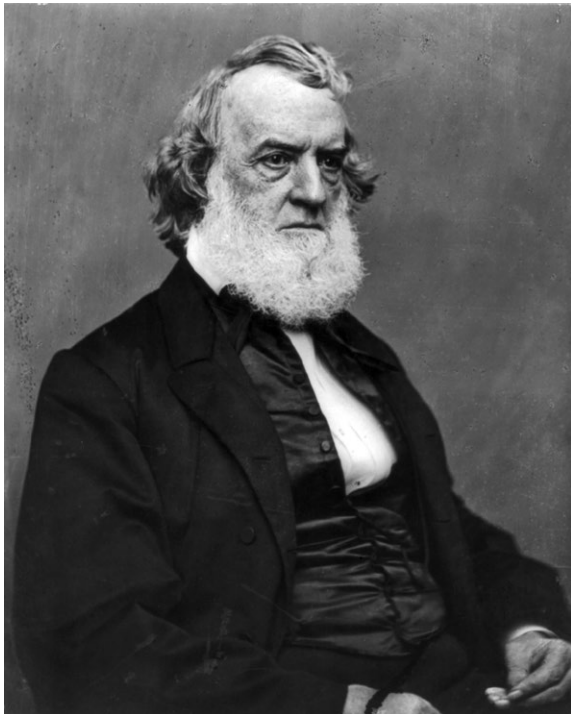


Portrait of an unidentified man with side-whiskers c. 1850 by Matthew Brady's studio.  
Library of Congress

Prince Albert sported the former—a style that signified a refined and restrained ideal of male comportment. John Brown, by contrast, wore the latter, harkening back to a militant, even Biblical, vision of manhood. Thus, it was the beard, and not whiskers, that connoted the kinds of Abrahamic virtues that Lincoln biographers have discerned in the president’s facial hair—the fearsome strength and gravitas he was so apparently lacking.



What, then, did contemporaries make of Lincoln’s whiskers? Even the most complimentary assessments of his new appearance did little to boost his patriarchal profile. “Old Abe,” wrote an enthusiastic correspondent for the *Lexington, Illinois Globe*, “is commencing to raise a beautiful pair of whiskers, and looks younger than usual.” The *Democratic Albany Argus*, claimed that “[t]he country does not want wisdom or courage in its Executive, but beauty. ... Lincoln knows it, and



A fine beard in the nineteenth-century sense. According to a Mr. Dicey in *MacMillan’s Magazine* for May 1862, U. S. Secretary of the Navy Gideon Welles wore “a long white beard and a stupendous white wig.”

Wikimedia Commons

he is up to the crisis!” And the *New York Herald’s* Henry Villard repeated the joke that “Abe is putting on [h]airs.”<sup>2</sup>

Admittedly, the last two comments originated with Lincoln’s political opponents—men with good reason to mock the president-elect’s appearance. But even his most enthusiastic supporters tended to describe his whiskers in terms that diminished rather than augmented his stature. One writer, for instance, suggested that Lincoln’s facial hair gave him “a more sober and serene outlook ... like a serious farmer with crops to look after, or a church sexton in charge of grave affairs.” It was no doubt earnest praise but hardly an august comparison for a man about to assume the presidency, let alone the mantle of Biblical patriarchy.<sup>3</sup>

Rather, Lincoln’s whiskers were meant to signify urbanity and refinement. Adopting a fashionable style of grooming—the wreath of whiskers that had been a fixture of men’s fashion for decades—Lincoln offered a visual counterpoint to persistent barbs about his rough manners, rural upbringing, and rustic sense of humor. Holzer, then, was at least partly right about the meaning of Lincoln’s whiskers. He was, in fact, shedding the campaign image of the frontier railsplitter. But instead of adopting the look of a firm patriarch (or even a stern sexton), he was cultivating the appearance of a man of the world: a person of humble origins but hard-earned cultural capital.

He had good reason to do so. Since assuming the national stage, Lincoln had been dogged by doubts about his social graces. An article from the *Columbus, Ohio Crisis*, for instance, lampooned his ignorance of classical languages, while informing polite readers that Lincoln had only recently “abstained from facetiously designating hotel napkins as towels.” And one contemporary, recalling an encounter between the former Secretary of the Navy George Bancroft and Lincoln noted a “most striking” contrast between the two: “the one courtly and precise in his every word and gesture, with the air of a trans-Atlantic statesman; the other bluff and awkward, his every utterance an apology for his ignorance of metropolitan manners and customs.” Eager to dispel these aspersions—especially in light of unfavorable comparisons between himself and the stately Jefferson



Davis—Lincoln grew fashionable whiskers, not a patriarchal beard.

What does this story tell us about Old Abe Lincoln? Besides the obvious—that the “most famous beard in American history” was not a beard at all—it reveals something about the nature of power in Civil War-era America. Taking command of a sinking ship of state and confronted with dire questions about his fitness for office, Abraham Lincoln chose a set of symbols that emphasized urbanity over more obvious emblems of authority. Calling on an old set of ideas about gentility and power, the president-elect claimed, in effect, that the right to rule hinged as much on politeness as on patriarchal strength or the imprimatur of the people. It’s a strange story, to be sure. But it reminds us of the extraordinary currency of symbols like these: that faced with national dissolution and civil war, Lincoln sought the urbane sophistication required for his job in, of all places, his hair.<sup>4</sup>



## Notes

1. Harold Holzer has also suggested that Lincoln’s decision to grow a beard was a pragmatic distraction: an effort to change the national conversation away from his bumbling comments on secession in late 1860 and early 1861. See Holzer, *Lincoln Seen and Heard*, 89.

2. The joke, according to Harold Holzer, may have first appeared in the *Illinois Daily State Journal* on Nov. 17, 1860. See Holzer, *Lincoln President-Elect*, 86, 514.

3. Quoted in R. Gerald McMurty, “Mr. Lincoln’s Whiskers,” typescript at the Lincoln Museum, Fort Wayne, Indiana. See also Holzer, *Lincoln President-Elect*, 335.

4. Gentility, according to historian Richard L. Bushman, “bestowed concrete social power on its practitioners,” offered “a resource for impressing and influencing powerful people,” and was practically a “prerequisite for inspiring trust.” See Bushman, *The Refinement of America: Persons, Houses, Cities* (New York: Vintage, 1992), xix.



Whiskers as tokens of urbane refinement: detail of John Taylor, “Philadelphia Fashions, Fall & Winter 1845, by Samuel A. Ward & Asahel F. Ward,” lithograph. Historical Society of Pennsylvania



Bewhiskered family men: detail of Edward Williams Clay, “Shankland’s American Fashions for the Fall & Winter of 1854 & 5,” lithograph. Library of Congress



A pocket globe made by Charles Price in 1716.  
The Science Museum, London

# Terrestriality

by Joyce Chaplin

On December 1, 2006, just past 18:30 GMT, Michael D. Griffin, Administrator of NASA, took the podium at the Royal Society of London. A physicist and engineer, Griffin nevertheless chose, at this event, to consider the history of the explorer's body. "I'm not a historian," he admitted, "but I am mindful of the lessons of history." Griffin's remarks were themselves historical, the most recent iteration in a long argument over an important question: is the human body innately terrestrial, unsuited to a prolonged time away from its earthly element?

Exploration is something that NASA and the Royal Society have in common. Griffin had participated in an earlier ceremony in which Stephen Hawking received the Royal Society's Copley Medal. The award, which is always a great honor, carried extra glory in Hawking's case: his medal had made a journey beyond the Earth and back on the Space Shuttle *Discovery*, named, as Griffin pointed out, after the *Discovery* that Captain James Cook had commanded on his second circumnavigation.

Another shuttle, the *Endeavour*, was named for the first ship Cook had taken around the world. In 1776 Cook had won the Copley Medal for his efforts in combating sea scurvy during his circumnavigations. Griffin managed to square this circle of historical references by comparing the explorer's old problem of sea scurvy to the new one of weightlessness in space:

This rate of bone loss for astronauts is ten times worse than for those who suffer from osteoporosis here on Earth. Thus, like sailors of the 18th century, our astronauts on the space station or in future missions to Mars face significant medical hazards in the form of bone fractures and kidney stones that could jeopardize their health and their mission. The equivalent of [antiscorbutic] sauerkraut for modern-day astronauts is the unpleasant but necessary nutrition and exercise regimen to create muscle tension and mitigate bone loss. But these are stopgaps, incomplete and unsatisfactory at best.



What Griffin didn't know was that Cook hadn't really solved the problem either. The sauerkraut story is a myth. Yet inside every bundle of historical clichés is an actual truth, and here it is.



During his two circumnavigations, Cook had indeed tackled scurvy, the plague of around-the-world expeditions since the very first, commanded (at least initially) by Ferdinand Magellan. Unlike space travel, these global circuits did not leave Earth—but they did depart terra firma. They were distinctive in the durations that their mariners spent at sea, combining all the hazards of single-ocean journeys into one long ordeal. This included passage over the dreaded Pacific, the world's largest ocean, and the one with the fewest obvious stopping points, as would be apparent even to twentieth-century circumnavigators (Amelia Earhart's life depended on her finding tiny Howland Island, which she failed to do.) During circumnavigations in the sixteenth and seventeenth centuries it was impossible to guarantee timely access to land, even as supplies shrank and crew and ships fell apart. Much depended on luck. Poor survival rates were typical, as men died, deserted, or were abandoned. (See Table 1)

NASA's website, like Griffin's Royal Society speech, claims that it was Cook who beat the devil. The *Endeavour* "reportedly made the first long-distance voyage on which no crewman died from scurvy, the dietary disease caused by lack of ascorbic acids." Moreover, "Cook is credited with being the first captain to use diet as a cure for scurvy, when he made his crew eat cress, sauerkraut and an orange extract."

"No" on both counts. John Byron (grandfather of the poet) is the first circumnavigator credited with maintaining a scurvy-free ship, and the first to bring back the overwhelming majority of his men. (See Table 2)

Nor were these happy outcomes the result of a dietetic magic bullet, either Cook's fabled sauerkraut or the citrus that is frequently credited to naval doctor James Lind. Rather, circumnavigators thought that it was firm green earth that

1. Survivors of Circumnavigations, Magellan to Anson

	Men: Out/back	Attrition(%)	Ships: Out/back	Loss(%)
Magellan/ Elcano (1519-22)	275/39	86	5/1	80
Loaísa (1524-32)	450/9	98	8/0	100
Drake (1577-80)	164/56	66	5/1	80
Noort (1598- 1601)	248/45	82	4/1	7/5
Le Maire/ Schouten (1615-16)	87/21	76	2/0	100
Dampier (1703-06)	183/18	90	2/0	100
Anson (1740-44)	1939/145	93	6/1	83

Statistics for the pre-Anson voyages are less certain than those in the next table. The attrition rates include various hazards: losses due mostly to deaths (Loaísa), to men being parted from the ships (Le Maire/Schouten), or to both factors (Dampier).

2. Survival Rates on Circumnavigations, Byron to Cook

	Men	Deaths	Mortality (%)
Byron	153	6	3.9
Wallis/Carteret	240	31	12.9
Bougainville	200	7	3.5
Cook (I)	96	40	41.7
Cook (II)	232	6	2.6

prevented (or cured) scurvy, and they accordingly thought of the disease as a kind of “earthsickness.” Iberian and French sailors coined that term by describing scurvy as “mal de tierra” or “mal de terre.” They did not mean that the earth made them sick (as “seasickness” means of the sea). They meant that their bodies pined for earth, much as a homesick person longs for home.

The idea of scurvy as earthsickness had existed since the sixteenth century. Whenever possible, circumnavigators put scorbutic invalids ashore to convalesce, to steep themselves in the air, water, and natural products of land. That was what Magellan did in Guam (in 1521), Olivier Van Noort in Brazil (1598), Joris Spilbergen also in Brazil (1614), William Dampier in the Galapagos (1684), Woodes Rogers at the Juan Fernández Islands (1709), and William Betagh on Cocos Island (1722). After his circumnavigation (1721-23), Dutch mariner Jacob Roggeveen stated that it took precisely “four-

teen days on land” for “fresh” food and “the assisting land air” to cure scorbutic sailors.

By the eighteenth century, mariners wondered whether a terrestrial essence could be preserved at sea by keeping the air below decks (as well as food and water stores) from losing a quality almost universally called “fresh.” Freshness usually indicated how recently something had been taken from land. One naval officer concluded that scurvy had only one “proper medicine: viz fresh meat and fruits.” At one Pacific island, George Anson’s men “eagerly devoured” a boatload of mown grass and butchered seals, both items “considered as fresh provision.” Conversely, heavily salted meat, the standard maritime ration, lacked freshness. If sailors had scurvy, “to give them salt provisions before they are thoroughly recovered, would be to murder them.” Indeed, the men “must inevitably perish without refreshments” derived from land, as if their sea provisions had, despite—or because of—their being salted, pickled, bottled, or con-fected, lost something in the translation.

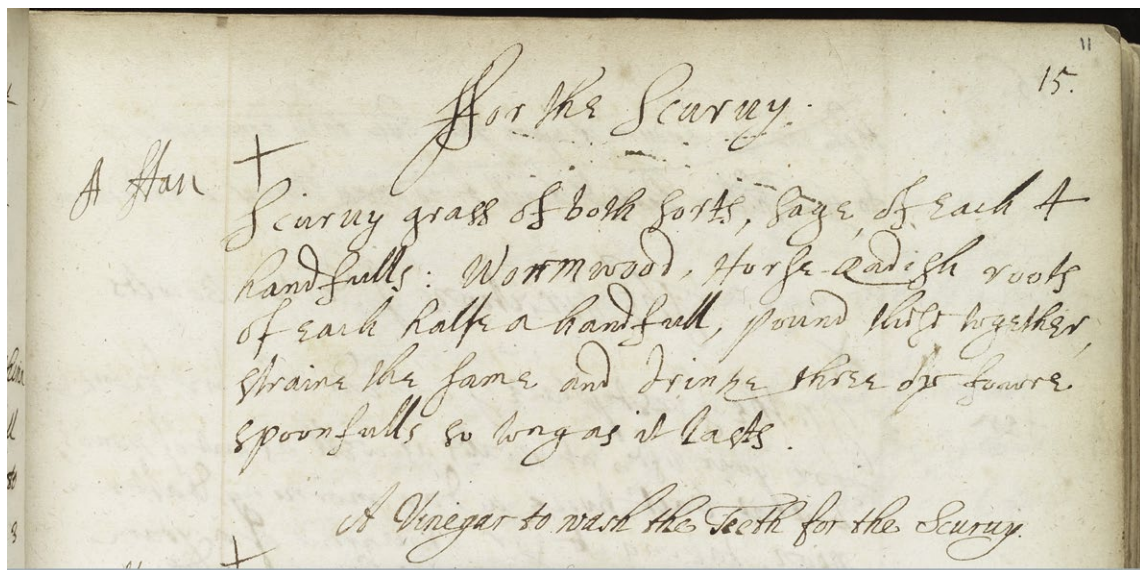
Commentators were not always confident that the “refreshments” yielded the full benefit of being on land. They often jumbled the land’s virtues (sometimes but not always its air) with those of its fresh products. At Juan Fernández, “the land” but also “the refreshments it produces, very soon recover most stages of the sea-scurvy.” Relapsed cases benefitted from “the smell of the earth together with the coconut milk, oranges, limes, bread-fruit and fresh meat.” Sailors were “languishing” for “the land and its vegetable productions (an inclination that attended every stage of the sea-scurvy).” “Nor can all the physicians, with all their *materia medica*,” one mariner explained, “find a remedy for it equal to the smell of a turf or a dish of greens.”

Why was land beneficial? Convinced they were right, most mariners did not bother to explain their claim. One of Anson’s officers concluded that humans had a terrestrial “*Je ne sais quoi* ... or in plain English, the land is man’s proper element, and vegetables and fruit his only physic”—the sailor’s basic belief, tricked out with a bit of French. Only it wasn’t unique to sailors; two eighteenth-century men of science agreed with it. Richard Mead said the speed of the land therapy



Winter’s bark,” named after Captain William Winter, a colleague of Sir Francis Drake who used the bark to treat scurvy among his crew. Woodcut from Carolus Clusius, *Rariorum aliquot stirpium per Hispanias observatarum historia*, (1582).

John Carter Brown Library



A scurvy remedy featuring scurvy grass, wormwood and horseradish from the recipe book of Lady Ann Fanshawe, wife of the English ambassador to Spain, 1651.

Wellcome Trust

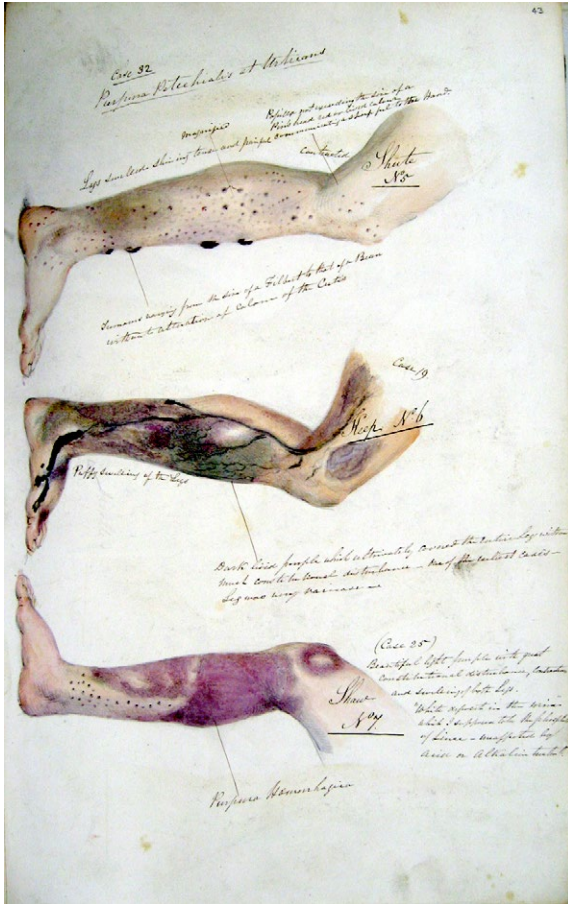
was “incredible.” “Upon their being exposed upon the ground,” he claimed, Anson’s invalids “immediately recovered.” Mead related how one incapacitated sailor begged some stronger companions to dig a hole in the soil and let him inhale its restorative effluvia. “Upon doing this, he came to himself, and grew afterwards quite well.” In the third edition of his classic work on scurvy, Dr. James Lind (a purported citrus enthusiast) also defended the faith in land as something more than a sailor’s yarn. He described an incident when some scorbutic seamen were taken ashore, stripped, and buried up to their heads in the earth. They revived, Lind related, without a hint of skepticism. (The burial therapy was common for sea scurvy, as if graves in the earth could sometimes restore life to the dying rather than inter the dead.) Lind even thought that, given the melancholy that haunted the scorbutic, “the joy of being landed” was enough to begin their recovery.

The belief in earthsickness should frame the better-known storyline in which medical experts, including Lind, tried to identify a more precise cure for scurvy. Cook dutifully carried an arsenal of Admiralty-approved items believed to be antiscorbutic, including sauerkraut. But in the essay that brought him the Copley Prize, Cook declared that none of these items was itself sufficient to prevent scurvy. Reports from his third (and fatal)

expedition, far from the Admiralty’s oversight, revealed how he and his men assumed that land and its fresh products were irreplaceable. Alexander Home, quartermaster on the voyage, in describing a brush with a poisonous plant in Kamchatka, marveled that it was “astonishing How we have Come to so little Damage in this way ... for it was the Custom of Our Crews to Eat almost Every Herb plant Root and kinds of Fruit they Could Possibly Light [upon] with[out] the Least Inquirey or Hesitation or any Degree of skill & knowledge of their Qualitys.” Cook urged his sailors, wherever possible, to go ashore and pluck “A Handkerchif full of greens.” He would also “Order [the men] on shore in partys to walk about the Country and smell the Fresh Earth and Herbage,” as he himself did, to set an “Example.”

Sea scurvy receded into memory in the nineteenth century. Ships’ provisioning improved, but the critical factor was ability to make land. Cartographic knowledge of safe havens had improved, as did access to them. The Congress of Vienna (1815) declared that European nations should maintain free ports. Except in times of war, western countries—and, crucially, their imperial territories—welcomed ships of all nations. Travel became safer.





By the 1840s, when the naval surgeon Henry Walsh Mahon documented this case of scurvy on the Australia-bound convict ship Barrosa, the disease had become a relative rarity.

The National Archives of the United Kingdom



Cosmonauts Grechko and Gubarev training in a Salyut mock-up.

Charles Darwin recognized this when he rounded the world on the *Beagle* (1831-36). “How glad I am,” Darwin wrote home, that “the *Beagle* does not carry a years provisions; formerly it was like going into the grave for that time,” whereas he enjoyed frequent shore leave. “The short space of sixty years [since Captain Cook] has made an astonishing difference in the facility of distant navigation,” he concluded. “A yacht now with every luxury of life might circumnavigate the globe,” not least because “the whole western shores of America are thrown” open” and Australia settled. Humans could circle the Earth without compromising their attachment to earth.



A sense of the human body’s innate terrestriality may be maritime circumnavigation’s most powerful legacy. As Michael Griffin observed at the Royal Society, a spacecraft can be engineered to support human life: air and water can be recycled, waste removed, and humidity controlled. To that extent, spaceships and Spaceship Earth have similar optimal functioning. But the ships do nothing to counteract weightlessness, a problem for any prolonged time spent in space.

Because of mounting evidence that the human body deteriorates in orbit, Soviet cosmonauts on the first significant space station, Salyut, were required to do two hours of exercise each Earth day. Success with that regimen has made exercise a standard element of space-station life, the best therapy against bone loss and muscle and tissue deterioration. On Mir, a subsequent Soviet space station, Valeri Polyakov, who holds the record of longest stint in space, 438 days (1994 to 1995), exercised as frenziedly as a caged hamster running in a wheel. He returned in no worse shape than cosmonauts who weathered shorter space assignments. That set the bar low. After more than a week in orbit, most returning astronauts and cosmonauts can’t pull themselves from their capsules, let alone walk away from them.

Orbital experiments with plants and animals have been equally discouraging, even though life in space might require cultivation of food, rather than the extra-terrestrial equivalents of salt-beef (which in any case might have the nutritional

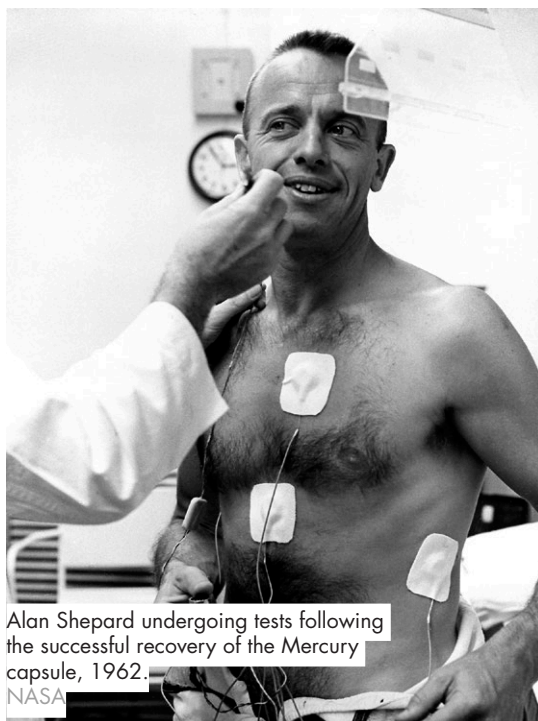


content leached from them by radiation). In 1971, Russians grew the first plants in space. Four years later, another Russian crew produced the first edible vegetables, onion sprouts. By 1982, a space-grown plant (*Arabidopsis*, the lab rat of the plant world) produced seeds that germinated on Earth. By 1997, Mir produced only the second success (in twenty-six years) at growing plants with viable seeds. Animals fared even worse. Quail eggs hatched on Salyut produced headless chicks. In a later attempt on Mir, the chicks seemed healthy, but soon died.

The successful breeding of mammals in space is the gold standard, essential reassurance that prolonged weightlessness and exposure to elevated radiation would not medically compromise humans. So far, the full mammalian cycle, from conception to conception, hasn't happened off Earth. It remains unclear whether humans, as mammals that live and reproduce in a terrestrial environment, could survive a long physical separation from Earth, unless altered into a "post-human" state.

NASA's magic bullet scenario is seductive: just as sauerkraut (later, Vitamin C) cured scurvy, so medical regimens will combat weightlessness in orbit or the absence of gravity in space, and perhaps future remedies will be less intrusive and more portable. The equivalent of vitamin tablets against scurvy might be a space station that rotates just enough to generate a medically-meaningful level of artificial gravity.

But it took a long time to beat scurvy. More than 200 years divide Magellan's deadly first circumnavigation from John Byron's healthy one. And it wasn't clear that the eighteenth century's carefully-tested shipboard regimens, meant to preserve or pursue land's fresh *je ne sais quois*, were what kept mortality low. The Congress of Vienna opened unprecedented territory (and fresh provisions) to circumnavigators after 1815, and frequent shore leave was a confounding variable. The first person to vindicate the claim that human life could be preserved at sea all the way around the world was Robin Knox Johnson, who completed the first solo, unassisted, nonstop circumnavigation in 1968, over 400 years after the return of Magellan's survivors. Even if modern science could reduce



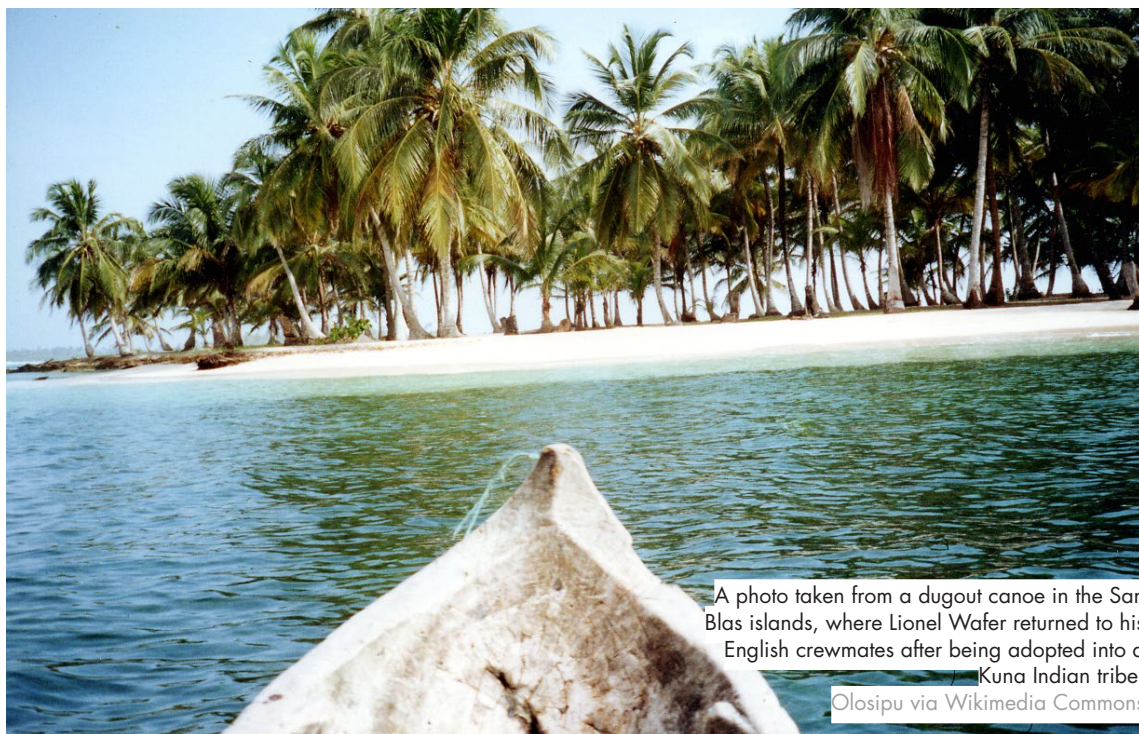
Alan Shepard undergoing tests following the successful recovery of the Mercury capsule, 1962.

NASA

that 400-year period by a quarter, to 100 years, we would still be at the halfway mark. That might be right, given the 26 years it took to replicate results in growing reproductive plant seeds in space, if we assume that humans are only four times as complicated as plants.

Advocates of space exploration often refer to the possibility that we may someday be forced to abandon our home planet. Leaving Earth will be the ultimate test of what makes us human. Are we essentially terrestrial? The earliest centuries of around-the-world travel generated copious evidence of humanity's longing for the Earth. The scorbutic sailor desired the smell of fresh-cut turf and he rallied at the mere sight of a distant green island peak. A sense of innate terrestriality seemed deeply rooted in the body, not just to the eye or the mind, but within the gut, the flesh, the bone. Even if we might somehow survive elsewhere in the cosmos, we should probably take very good care of the Earth. We might miss it.

For a fuller treatment of this topic see Joyce Chaplin, Chaplin JE. "Earthsickness: Circumnavigation and the Terrestrial Human Body, 1520-1800," *Bulletin of the History of Medicine*, 86/4, 2012.



A photo taken from a dugout canoe in the San Blas islands, where Lionel Wafer returned to his English crewmates after being adopted into a Kuna Indian tribe.

Olosipu via Wikimedia Commons

# A Pirate Surgeon in Panama

by Benjamin Breen

The ship came to anchor on an August evening. Sea fireflies glowed around the moorings, their indigo light making specters of the sailors' gaunt faces. There had already been two mutinies, and the nerves of the crew were as frayed as the ship's ropes.

At dawn the next morning, the captain fired two cannons to signal that it was time for the Kuna Indians to return their guests—or their hostages, depending on your point of view. Long dugout canoes glided toward the ship from the beach. At length, four bedraggled figures were hauled onto the deck: crewmembers who had been left behind in the spring. But a fifth, “painted like an Indian” and wearing a loincloth, stayed apart. “He was some time aboard before I knew him,” remembered his closest friend, the captain.<sup>2</sup>

The fifth man left his own account. “I sat awhile cringing upon my hams among the Indians, after their Fashion, painted as they were, and all naked” he recalled. His face was partially obscured since

“my nose-piece [was] hanging over my mouth.” It took almost an hour for his shipmates to recognize him. Then one started backwards in shock. “Why! Here’s our doctor!” the man cried, and a crowd gathered around him, trying to rub off the geometric paint that obscured his features.

It was Lionel Wafer, the pirate surgeon.



Almost everything we know about Dr. Lionel Wafer comes from his own pen. He enters the historical record as a teenage surgeon's apprentice who risked the hazardous voyage to the Indian Ocean on an East India Company merchant ship in the 1660s. He surfaced next in Jamaica. The island, at that time a new possession of the British crown, was beginning to acquire a reputation as a place where working-class Britons could make their fortune—largely via the brutal exploitation of enslaved African sugar plantation laborers. Wafer found work as a plantation surgeon, tending to



crushed limbs, malarial fevers, venereal diseases, and other dangers of colonial life.

But the 1670s was also the golden age of piracy, and pirates always needed surgeons. Wafer, evidently feeling wanderlust, joined an expedition in 1679. A year later, we find him among the crew of the notorious buccaneer Bartholomew Sharp on a voyage to pillage the rich ports of the Spanish American Pacific coast (the “South Seas” of pirate lore). It was there that he became close friends with William Dampier, who emerged as the expedition’s leader.

And it was on an expedition with William Dampier in the isthmus of Darien, on the Atlantic coast of present-day Panama, that Wafer’s troubles began.



Three years ago, I visited the Rare Books and Manuscripts Room at the British Library to read Dampier’s manuscript account of his voyages. Throughout his text, Dampier refers to Wafer simply as “our chirurgeon [surgeon].” One day in the jungle, Dampier writes,

our chirurgeon came to a sad disaster. [While] drying his powder a careless man passed by with his pipe lighted and sett fire to his powder which scalded his knee and reduced him to that condition that he was not able to march, wherefore wee allowed him a slave to carry his things being all of us much dissatisfied at the accident.

With his knee “scorch’d” so badly “that the Bone was left bare, the Flesh being torn away,” it soon became apparent that Wafer was going nowhere. Almost immediately, according to Wafer’s account, the “Negro whom the Company had allow’d me for my particular Attendant, to carry my Medicines” absconded into the jungle. (I wish we could follow this unnamed man’s journey into the jungle, but unfortunately his disappearance in the undergrowth mirrors his disappearance from the historical record.)

Unable to travel and without his medicines, Wafer parted from the rest of the company. He stayed behind in the Darien with a crewmember named



The word “buccaneer” was a reference to the makeshift eating habits of early European settlers in the Caribbean, having been adapted from the French *boucan*, “a frame on which to cook meat,” originally from the native Tupi languages of Amazonia and the Antilles. The motif is still visible in this 1707 map of the South Seas showing the early English navigator Thomas Cavendish enjoying a proto-barbeque with his crew.

Pieter van der Aa, “Zee-toogten door Thomas Candys na de West Indien.” copperplate map, 1707 (Wikimedia Commons)

Richard Gopson, former apprentice druggist in London and “an ingenious Man, and a good Scholar,” in Wafer’s estimation. “The Indians undertook to cure me; and apply’d to my Knee some Herbs,” Wafer reported, applying a poultice for twenty days that left him “perfectly cured.” Before long he’d gained fluency in the local Kuna dialect, making observations about Central American medical and bodily practices in the process.

In one memorable episode, Wafer participated in a medicinal ‘bleeding’ of the wife of the local Kuna leader, Lacenta. Wafer’s own account of the incident portrays him as a heroic ‘civilized’ physician who was able to convince the Indian medical practitioners that the European style of medicinal bleeding (phlebotomy) was far superior:<sup>2</sup>

It soe happened that the day after our arrival at the Kings Pallace one of his Queens being indisposed was to be lett blood which their Drs. thus performe[.] The Patient is seated on a Stone in the River and the Doctors with a small





A depiction of Wafer's patron, Lacenta, along with his wife, children and attendants, from Wafer's *New Voyage and Description* (London, 1699). "I went naked as the Salvages," Wafer remembered, "and was painted by their Women; but I would not suffer them to prick my Skin, to rub the Paint in." Internet Archive



The Kuna practice of bloodletting, as depicted by John Savage, the engraver for Wafer's 1699 book. Internet Archive

bow shoot their arrowes into the naked body of the Patient from head to foote shooting their arrowes as fast as they can not missing any part[.] [B]ut the arrows are gaged soe that they penetrate noe further then wee generally thrust our Lancetts and if they hitt a veine which is fulle of winde and blood spurt out a little they will leape and skip about shewing many antick gestures in triumph of soe great a piece of Arte...

The result was a bizarre battle between competing approaches to phlebotomy. For Wafer, as for other early modern physicians, the body was a microcosm of vital humors that it was the physician's job to keep in balance. Diet and medicines could do part of the work, but when symptoms became dire, harmful humors had to be forcibly evacuated from the body, and bloodletting was the preferred way to achieve a balance.

Wafer failed to acknowledge the obvious parallels between his own medical techniques and those of the Kuna healers, who also practiced extensive bloodletting. Instead, he portrayed himself as an enlightened purveyor of modern medical techniques to a backward culture: "Perceiving their Ignorance," Wafer wrote, he "told the King that if he pleased I would shew him a better way without putting the Patient to Soe much torments." The king gave the word, "and at his Comand I bound up her Arme with a piece of Barke and with my Lancett breached a veine."

Despite Wafer's confident belief in European medical superiority on this occasion, other parts of his account hint that he embraced indigenous American culture and practices. Although Wafer himself minimized this acceptance, Dampier's parallel account makes it clear that Wafer fully adopted the bodily aesthetics of the Kuna, appearing "painted like an Indian," complete with a large golden nose ring. In his account Wafer played down his adoption of Kuna customs, but there's a perceptible wistfulness in his remembrance of his time in the Darien. Back in England, Wafer was a commoner with no medical li-

cense and no social status. But among the Kuna, he “was carried from plantation to plantation and lived in great Splendor and repute.”



Although Lionel Wafer's story is largely forgotten today, it offers a fascinating parallel with the far more famous “captivity narratives” of Puritan New Englanders who lived among Algonquian tribes in precisely the same period (you can read Glenda Goodman's account of one of the most famous in a previous Appendix article). Like North American captives, Wafer was formally adopted into a Kuna community and declared a “son” of King Lacenta. He learned the Kuna language, traveled in a royal hunting party, and gained knowledge of local plants and medicines.

But if Wafer is far from the only seventeenth-century European to leave a report of his adoption into an Indian tribe, there are aspects of his story that are virtually unique. As we've seen, he practiced a form of hybrid Kuna-European medicine. He also left a curious report of what he called the “Moon-ey'd” Kuna, with “Milk-white skins ... much like that of a white Horse,” and crescent-shaped eyes. They were “dull and restive in the Day-time, yet when Moon-shiny nights come, they are all Life and Activity ... running as fast by Moon-light, even in the Gloom and Shade of the Woods, as the other Indians by Day.” This strange account reflects a well-documented propensity toward albinism among the Kuna—but for Wafer, it was further proof of the supernatural nature of the Panamanian jungles.

While with the Kuna, Wafer also witnessed the work of shamans (*Pawawers* or conjurers, as Europeans called them) who predicted the circumstances of his return to the Christian world with uncanny accuracy. They had done so, Wafer claimed, by summoning the devil:

They sent for one of their Conjurers, who immediately went to work to raise the Devil, to enquire of him at what time a Ship



“A boy lights one end of a [tobacco] Roll,” Wafer recalled, “the End so lighted he puts into his Mouth, and blows the Smoak through the whole length of the Roll into the Face of every one of the Company or Council, tho’ there be 2 or 300 of them.”

[Internet Archive](#)



Tupi Indians in Brazil tormented by devils (detail). Theodor de Bry, *Americae tertia pars* (Frankfurt, 1592), 223.

[John Carter Brown Library](#)





Europeans and indigenous Americans being judged at the court of Nature for modifying their bodies, from the frontispiece to John Bulwer's *Anthropometamorphosis* (London, 1656).

Wikimedia Commons

would arrive here; for they are very expert and skillful in their sort of Diabolical Conjurations ... They continued some time at the Exercise, and we could hear them make most hideous Yellings and Shrieks; imitating the Voices of all their kind of Birds and Beasts.

The pawawers declared that Wafer would be rescued in ten days, but that his companion Gopson would die soon after: "All of which fell out exactly according to the Prediction." Wafer's account of the devil in the New World was to be expected—Spanish and Portuguese chronicles of American conquest described indigenous Americans who wielded the power of Satan to prognosticate, curse, or cure.

Yet because it portrayed these "Diabolical Conjurations" as accurate, Wafer's account raised unsettling questions about the potentially supernatural origin of travelers' knowledge during an era when such knowledge had never been more valuable. As David Livingstone, Harold Cook, and other historians have shown, travelers' accounts provided the first-hand reporting of phenomena that fueled the development of the natural sciences. But who was an acceptable source for this data? Could it come from shamans as well as surgeons?

By the close of the seventeenth century, what Anna Neil has called 'buccaneer ethnographers' like Dampier had demonstrated that even criminals and pirates could collect empirical data about the world's ethnography and geography. Yet the personal histories of such individuals, who frequently resided among non-Christian indigenous peoples for extended periods, put them in the complex position of serving as mediators between scientific travel and indigenous spirituality.

Wafer's adoption of Kuna dress and ceremonial body paint, in particular, raised concerns about his trustworthiness that were tied to larger debates about the role of the devil in society. John Bulwer's 1656 frontispiece to *Anthropometamorphosis, or the Artificial Changeling*, for instance, shows a European woman,



a hair-covered man and a South American Indian with full body paint standing side by side. They are being judged by Nature, Adam and Eve and a body of disapproving magistrates (including the ghost of Galen) for transforming their bodies, while the devil flies above them laughing and saying, “In the image of God created he them! But I have new-molded them to my likeness.”

Wafer had written that his Kuna body paint eventually rubbed off, often with the “peeling off of Skin and all,” to reveal a European underneath—but did his time in the world of the Kuna leave traces of the indigenous that took longer to disappear? (Mairin Odle has written previously for *The Appendix* about the difficulties of removing early modern tattoos).

As a pirate surgeon, Wafer stood squarely in between these two worlds. As Britain’s preeminent firsthand witness of the Panama region, he was a key figure in early attempts to understand the American tropics—and in efforts to make use of its resources. Indeed, in July of 1687 Wafer had been interviewed regarding the Darien’s colonization potential by none other than John Locke. Wafer’s account had also been printed and bound together with an account of Darien written by an unspecified “member of the Royal Society” in the same year.

In the preface to the second edition to the *New Voyage and Description*, printed in 1704, Wafer attempted to reaffirm his status as a credible observer, writing that he wished to “vindicat[e] my self to the World” regarding his previous account of “the Indian way of Conjuring,” which, he explained vaguely, had “very much startled ... several of the most eminent Men of the Nation.” In this preface Wafer continued to maintain that the Kuna shamans practiced Satanism, and he buttressed his authority by citing parallel accounts produced by Scottish settlers in the Darién. He pointedly refrained, however, from defending his earlier claims about the accurate predictions this method produced.

Would Wafer have affirmed the truth of “diabolical conjurations” if he were in Europe and not Panama? Or did these powers exist only in relation to the spaces that harbored them? Was the devil dif-

ferent in the tropics, and among tropical bodies? The story of Lionel Wafer, the pirate surgeon of Panama, leaves the question open.

## Notes

1. This is William Dampier’s full account of Wafer’s return: “It was in the evening when we came to an anchor, and the next morning we fired two guns for the Indians that lived on the Main to come aboard; for by this time we concluded we should hear from our five men that we left in the heart of the country among the Indians, this being about the latter end of August, and it was the beginning of May when we parted from them. According to our expectations the Indians came aboard and brought our friends with them: Mr. Wafer wore a clout about him, and was painted like an Indian; and he was some time aboard before I knew him.”

2. I’ve quoted from Wafer’s manuscript account, which is included within William Dampier’s own manuscript, when it differed in significant ways from his printed account. I transcribed parts of the manuscript (British Library Sloane MS 3236) in the summer of 2010 and was fascinated by the metatextual nature of it—Dampier writes at one point, “I shall not give a relation or a description of the Country nor the manners and Customs of the natives but refer it to Mr. De La Wafer our Chirurgeon who by his Longer abode in the Country is better able to doe it then any man that I know.”



A recreated apothecary shop in Alexandria, Virginia, is representative of the style and organization of eighteenth-century shops.

Wikimedia Commons

# Interpreting “Physick”: The Familiar and Foreign Eighteenth-Century Body

by Lindsay Keiter

Aspirin. It’s inevitable.

When asked what medicine they’d want most if they lived in the eighteenth century, the visitors will struggle in silence for few moments. Then, someone will offer, “Aspirin?” Sometimes it’s delivered with a note of authority, on the mistaken notion that aspirin is derived from Native American remedies: “Aspirin.” I modulate my answer depending on the tone of the question. If the mood feels right, especially if the speaker answers with a note of condescension, I’ve been known to reply, “Do you know anyone who’s died of a mild headache?”<sup>1</sup>

I work as an interpreter in the apothecary shop at the largest living history museum in the US.

If visitors leave with new knowledge, I’m satisfied. Another hundred people will remember the next

time they make a meringue that cream of tartar is a laxative. But what I really want them to come away with is an idea. I want visitors to understand that our eighteenth-century forbears weren’t stupid. In the absence of key pieces of information—for examples, germ theory—they developed a model of the body, health, and healing that was fundamentally logical. Some treatments worked, and many didn’t, but there was a method to the apparent madness.

Most visitors are mildly alarmed to learn that there was nothing available for mild, systemic pain relief in the eighteenth century. You’d have to come back next century for aspirin. Potent pain management was available via opium latex, often mixed with wine and brandy to make laudanum. In the eighteenth century, small amounts were used as a narcotic, a sedative, a cough suppressant, or to stop up the bowels, but not for head-

aches.

There were headache treatments, however. Colonial medical practitioners recognized multiple types of headaches based on the perceived cause, each with its own constellation of solutions. As is often the case, the simplest solutions were often effective. For a headache caused by sinus pressure, for example, the treatment was to induce sneezing with powered tobacco or pepper. Some good, hard sneezing would help expel mucus from the sinuses, thus relieving the pressure. For “nervous headaches”—what we call stress or tension headaches—I uncork a small, clear bottle and invite visitors to sniff the contents and guess what the clear liquid inside could be.

With enough coaxing, someone will recognize it as lavender oil. While eighteenth-century sufferers rubbed it on their temples, those with jangling nerves today can simply smell it—we don’t understand the exact mechanism, but lavender oil has been shown to soothe the nervous system. As a final example, and to introduce the idea that the line between food and medicine was less distinct two hundred years ago, I explain the uses of coffee in treating migraines and the headaches induced after a “debauch of hard liquors.” Caffeine is still used to treat migraines because it helps constrict blood vessels in the head, which can reduce pressure on the brain.

But if your biggest medical concern in the eighteenth century was a headache, you were lucky. Eighteenth-century medical practitioners faced menaces like cholera, dysentery, measles, mumps, rubella, smallpox, syphilis, typhus, typhoid, tuberculosis, and yellow fever. Here are a few.



## Malaria

In discussing larger threats, I generally choose to focus on an illness that many visitors have heard of before, and for which a



This seventeenth-century engraving shows medicines being compounded and dispensed. Women were not licensed as apothecaries in the eighteenth century, but evidence suggests that in England, at least, they sometimes assisted husbands and fathers, despite not being licensed.

Wolfgang Helmhard Hohberg’s *Georgica Curiosa Aucta* (1697)  
via Wellcome Images



The bark of the cinchona tree, called Peruvian bark or Jesuits bark, was an important addition to the European pharmacopeia.

Wikimedia Commons



treatment was available. The “intermittent fever” also gives visitors a glimpse of one of the difficulties of studying the history of medicine—vague and often multiple names for a single condition. Intermittent fever was called such because of a particular symptom that made it easier to identify among a host of other fevers—sufferers experienced not only the usual fever, chills, and fatigue, but also paroxysms: cycles of intense chills followed by fever and sweating. Severe cases could result in anemia, jaundice, convulsions, and death.

After describing the symptoms to guests, I mention that the disease tended to afflict those living in swampy, hot, low-lying areas—such as Williamsburg. Older visitors often put it together—intermittent fever is what we call malaria. And typically, they know the original treatment for malaria was quinine.

It’s one of the times I can say, “We have that!” rather than, “Give us another hundred years.” I turn to the rows of bottles on the shelf behind me—not the eighteenth-century original apothecary jars that line the walls, but a little army of glass bottles, corked and capped with leather. The one I’m looking for is easy to find—a deep red liquid in a clear glass bottle. As I set it on the front counter, I introduce the contents: “Tincture of Peruvian bark.” I tend to add, “This is something I would have in my eighteenth-century medical cabinet.” Walking to the rear wall, I pull open a drawer and remove a wooden container. I lift the lid to reveal chunks of

an unremarkable-looking bark. I explain that the bark comes from the cinchona tree, and, as undistinguished as it looks, it was one of the major medical advances of the seventeenth century.

Also called Jesuits’ bark, cinchona was used as a fever-reducer by native peoples in South America before being exported by the Jesuits to Europe. Its efficacy in fighting fevers soon made it a staple in English medical practice. While eighteenth-century apothecaries were ignorant of quinine, which would not be isolated and named until the 1810s, they were nonetheless prescribing it effectively.

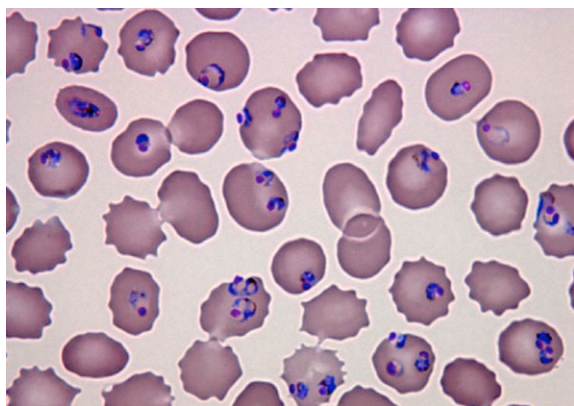
I make a point of explaining to visitors that quinine does not act like modern antibiotics do in killing off infections directly. Malaria is neither bacterial nor viral, but protozoan. Quinine (and more modern drugs derived from it and increasingly from Chinese *Artemisia*) interrupts the reproductive cycle of the malaria protozoa, halting the waves of offspring that burst forth from infected red blood cells. The protozoa, now rendered impotent, hole up in the sufferer’s liver, often swarming forth later in life in another breeding bid. So technically, once infected, you’ll always have malaria, but can suppress the symptoms.

Peruvian bark was used to treat a wide range of fevers, but it was not the only treatment. In certain instances of fever, it was used in conjunction with bloodletting. Bloodletting is a practice I’m always eager to explain, because it is so revealing of just how much our understanding of the body has changed in two centuries. Plus it freaks people out.



## Fevers: A Note on Phlebotomy

Bloodletting or phlebotomy, dates back to antiquity. In the humoral theory of the body promulgated by Greco-Roman physicians, removing blood promoted health by balancing the humors, or fluids, of the body. This theory prevailed from roughly the fourth through the seventeenth centuries. Medical theorists gradually adopted a more mechanical understanding of the body, inspired by a renewed interest in anatomy and by experiments that explored the behavior of fluids and



The rings and dark dots are the result of infection by *Plasmodium falciparum*, one of the strains of protozoa that cause malaria.

Wikimedia Commons

gases. These new theories provided an updated justification for bloodletting in particular cases.

Whereas bloodletting had been a very widely applied treatment in ancient times, eighteenth-century apothecaries and physicians recommended it in more limited cases. In terms of fevers, it was to be applied only in inflammatory cases, which were associated with the blood, rather than putrid or bilious fevers, which were digestive. In *Domestic Medicine*, a popular late-eighteenth century home medical guide, physician William Buchan warned that “In most low, nervous, and putrid fevers ... bleeding really is harmful ... . Bleeding is an excellent medicine when necessary, but should never be wantonly performed.”

Eighteenth-century medical professionals believe that acute overheating often brought on inflammatory fevers. Key symptoms of inflammatory fevers were redness, swelling, pain, heat, and a fast, full pulse. Anything that promoted a rapid change in temperature, such as overexertion or unusually spicy food, could set off a chain reaction that resulted in inflammation. Drawing on mechanical theories of the body and renewed attention to the behavior of fluids, doctors complicated simple humoral explanations of disease. Blood, as a liquid, was presumed to behave as other liquids did. When heated, liquids move more rapidly; within the closed system of the human body, overheated blood coursed too rapidly through the body, generating friction. This friction in turn generated more heat and suppressed the expression of perspiration and urine, which compromised the body's natural means for expelling illness. Removing a small quantity of blood, doctors reasoned, would relieve some of the pressure and friction in the circulatory system and allow the body to regulate itself back to health.

Picking up the lancet, I roll up my sleeve and gesture to the bend of my elbow, where blue veins are faintly visible through my skin. Generally, I explain, blood was let through these veins by venisection, where the lancet—a small pointed blade that folds neatly into its wooden handle like a tiny Swiss Army knife—is used to make a small incision below a fillet—a looped bandage tightened on the upper arm to control blood flow. The process is akin to blood donation today, except that



“Breathing a Vein” by James Gilray, 1804.  
Wikimedia Commons

the blood removed will be discarded. Apothecaries and physicians, striving to be systematic and scientific, often caught the escaping blood in a bleeding bowl—a handled dish engraved with lines indicating the volume of the contents in ounces. The volume of blood removed, Buchan cautioned, “must be in proportion to the strength of the patient and the violence of the disease.” Generally, a single bloodletting sufficed, but if symptoms persisted, repeated bloodlettings might be advised.

Visitors are generally incredulous that the procedure was fairly commonplace, and that people did it in their homes without the supervision of a medical professional. Bloodletting was sometimes recommended to promote menstruation or encourage the production of fresh blood. Both published medical writings and private papers suggest that folk traditions of bloodletting for a variety of reasons persisted throughout the eighteenth century.

Modern guests question both the safety and the efficacy of bloodletting. It terms of safety, it was





A thumb lancet such as this was a common bloodletting tool.  
Wellcome Images



Bleeding bowls made of pewter, porcelain, and enameled tin allowed doctors to measure the volume of escaping blood.  
Wikimedia Commons



This 1774 German engraving shows bloodletting from the elbow and from behind the ear.  
Wikimedia Commons

generally a low-risk procedure; one function of bleeding was to push pathogens out of the body, thus limiting the risk of blood-borne infections. Routine bloodletting was typically limited to six or eight ounces of blood. By comparison, blood donors today give sixteen ounces. The human body is actually fairly resilient and can withstand substantial blood loss, so even in acute cases where blood was repeatedly let, exsanguination was unlikely to be the cause of death. One famous case visitors sometimes bring up is the death of George Washington in December 1799. While it is difficult to know the circumstances precisely, Dr. David Morens with the National Institutes of Health argues that the first President was afflicted with acute bacterial epiglottitis. The epiglottis is the small flap that prevents food from entering the airway or air from entering the stomach; when it becomes infected it swells, making eating, drinking, and breathing increasingly difficult, and eventually impossible. According to notes taken by the trio of physicians who treated Washington, he endured four bloodlettings in twelve hours, removing a total of 80 ounces of blood—the limit of what was survivable. This aggressive treatment presaged the “heroic” medicine of the nineteenth century and was far out of line with the recommendations of earlier physicians such as Buchan. Even so, Morens suspects that asphyxiation, not bloodletting, was cause of death.

Thus, while bloodletting probably caused few deaths, it also saved few lives. Aside from a possible placebo effect, bloodletting’s primary efficacy is in treating rare genetic blood disorders such as polycythemia (overproduction of red blood cells) and hemochromatosis (an iron overload disorder). So while the logic behind bloodletting seemed reasonable, it was due to the lack of a critical piece of information. “What actually caused most of the diseases doctors tried to treat with bloodletting?” I’ll ask. “Germs!” a visitor calls out. “Unfortunately,” I reply, “it will be another seventy-five years until the medical establishment accepts that we’re all covered in microscopic organisms that can kill us.”





## The Common Cold

Most medical recommendations weren't so seemingly bizarre, however. Eighteenth-century doctors strove to "assist Nature" in battling disease by recommending regimens—modifications of behavior, environment, and diet that were thought to promote recovery. Doctors and caretakers induced vomiting (an "upward purge"), defecation (a "downward purge"), urination, and/or sweating to help the body expel harmful substances and offered diets that were thought to help warm, cool, or strengthen the body. When visitors ask when the most commonly prescribed medicine is, we can't give them a direct answer—the apothecaries kept track of debts and credits but not what was purchased—but we tell them the most common category of medicine we stocked was a laxative. Keeping one's digestion regular was a priority in the eighteenth century.

Visitors are often surprised to hear that they unwittingly follow regimens themselves, often for the same common ailments that laid low our colonial and revolutionary forbears. The example I typically use is the common cold, for which there is and never has been, alas, a cure. Looking to the row of children typically pressed up against the counter, I ask, "When you're sick and can't go to school, do you get more rest, or more exercise?" "Rest," they answer in chorus. "And where do you rest?" "In bed." "And what do you eat a lot of when you're sick?" "Soup" and "juice" are the usual answers. "You're behaving much as you would have two hundred and fifty years ago!" I tell them. "Doctors recommended resting someplace warm and dry and eating foods that were light and easy to digest—including broths and soups."

Visitors are fascinated and often charmed to hear that the treatment of colds has essentially stayed the same. "When you take medicine for your cold," I continue, "does it make you feel better or make your cold go away?" Most people are dumbfounded when they consider that the majority of medicine in the eighteenth century and today are to alleviate symptoms. Then as now, individuals and households selected treatments for stuffy noses, coughs, and fevers.

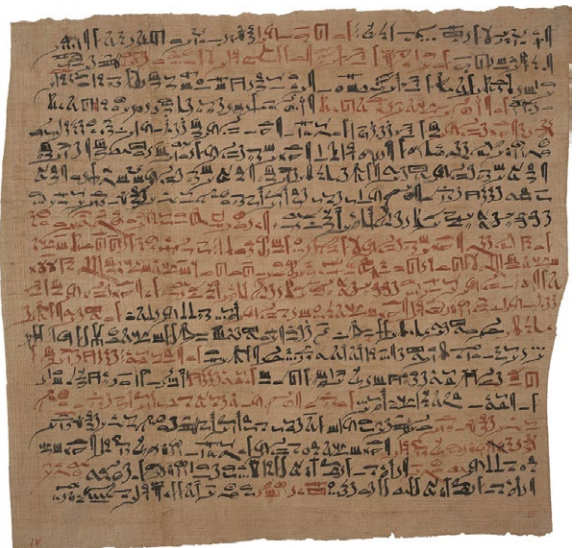


## Surgery

While the treatment of disease has aspects both foreign and familiar, our distance from our forbears truly comes across in the comparatively primitive levels of surgery and midwifery. Because the squeamishness of guests varies widely, and because interpreters are discouraged from inducing nausea or fainting, we must proceed cautiously.

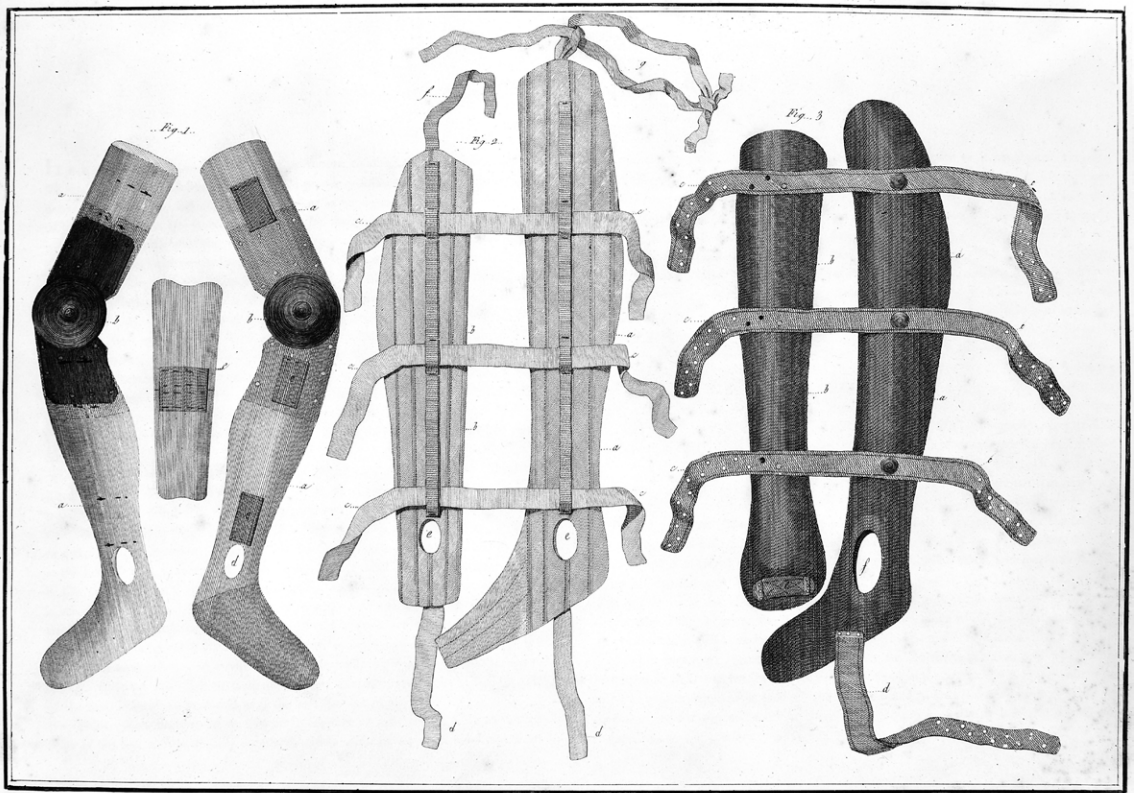
Surgery, visitors are shocked to hear, was not a prestigious profession until recently. In the eighteenth century, any physical undertaking for medical purposes was surgery—bandaging, brushing teeth, bloodletting. While separate in England, in the colonies apothecaries often took on surgical duties; low population density generally prevented specialization outside of large cities. In England, surgeons shared a guild (professional organization) with barbers, who pulled teeth and let blood as well as grooming and styling hair. A surgeon's purview was more expansive—they set broken bones, amputated extremities when necessary, and removed surface tumors, requiring greater knowledge of anatomy.

Simple breaks could be set manually, as they are today. I often use myself as an example—I have



The common cold has been with humanity for a very long time: it was described as far back as 1,550 BCE, in the Egyptian medical text known as the Ebers Papyrus.

[Wikimedia Commons](#)



Before plaster casts were developed in the nineteenth century, broken bones could only be splinted. This engraving shows more elaborate splints for broken legs.

Wellcome Images

an approximately fifteen-degree angle in my wrist from a bad fall several years ago. I explain that my wrist was set manually, with no pain management, very much as it might have been in the eighteenth century. (You know you're a historian when that's what you're thinking on the gurney as a doctor jerks your bones back into alignment.)

Two factors limited the scope of surgical operations in the eighteenth century. The first was the lack of antisepsis; with no knowledge of germ theory and thus little control for infections surgeons avoided guts and kept operations as simple and efficient as possible. The second was pain.

A visitor always asks, "What did they do for pain?" Upon being told, "Nothing," they blanch and then argue.

"What about opium?"

"Opium makes you vomit, and you're restrained

during operations and often on your back. You wouldn't want to choke to death during your surgery."

"They had to have done SOMETHING! A few shots of whiskey at least."

While we can't be sure what people did at home or while waiting for the doctor to arrive, doctors opposed the consumption of spirits before surgery because of increased bleeding. Occasionally, a visitor will ask if patients were given a thump on the head to make them lose consciousness.<sup>2</sup>

"Well, the pain will probably wake you up anyhow," I point out, "and now you have a head injury as well as an amputation to deal with."

Generally, amputations lasted less than five minutes—minimizing the risk of infection and the chances of the patient going into shock from blood loss and pain. Limbs weren't simply lopped

off, however. Surgeons could tie off large blood vessels to reduce blood loss, and the surgical kit we display shows the specialized knives, saws, and muscle retractors employed by surgeons to make closed stumps around the severed bone.

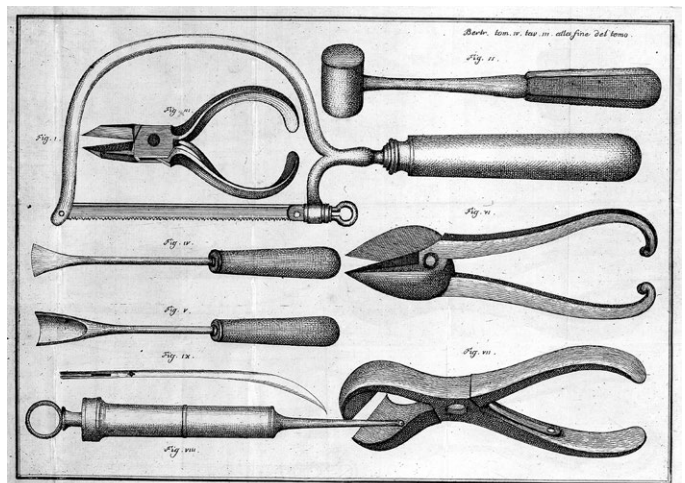
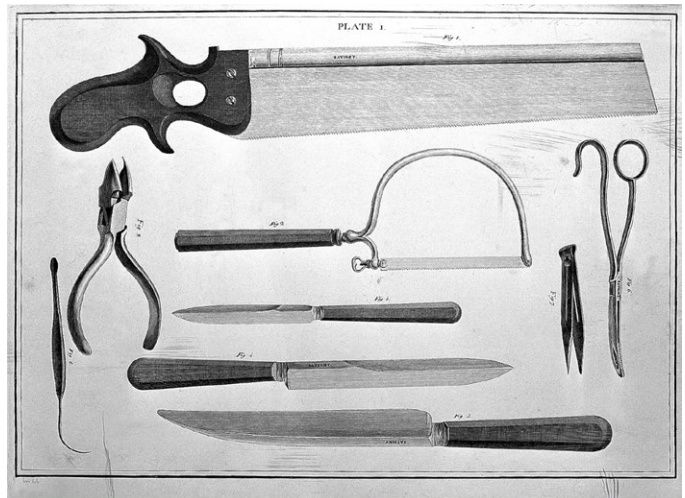
Removing troublesome tumors was another challenge surgeons faced, commonly from breast cancer. This surprises some visitors, who tend to think of cancer as modern disease. I've even had a visitor insist that there couldn't have been cancer two hundred years ago, when there were no chemical pesticides or preservatives. I informed him that cancer can also arise from naturally occurring mutations or malfunctions in cells—it even showed up in dinosaurs. Mastectomies have been performed for thousands of years. Because there was no means of targeting and controlling tumors, aggressive growth sometimes cause ulcerations through the skin, causing immense pain and generating a foul smell. Medicines such as tincture of myrrh were available to clean the ulcers and reduce the smell but did nothing to limit the cancer's growth.

When ulceration made the pain unbearable or the tumor's size interfered with everyday activities, sufferers resorted to surgery. Surgeons sought to remove the entire tumor, believing that if the cancer were not rooted out entirely, it would strike inward where they could not treat it. They were half right; cancer is prone to reappearing elsewhere in the body. Unfortunately, the removal of tumors triggers this—tumors secrete hormones that prevent the proliferation of cancer cells in other areas of the body. Removing tumors unleashes dormant cancer cells that have been distributed throughout the body. Without antisepsis and anesthesia, surgeons could not follow cancer inward.



## Midwifery

Childbirth was one mystery partially penetrated in the eighteenth century. Prominent



Elements of a mid-eighteenth-century surgeon's kit.  
Wellcome Images





This illustration shows how a stump was created after amputating the lower leg. S. Mihles, *The Elements of Surgery*, 1764.  
Wellcome Images



Illustration of fetal development in William Smellie's *Treatise on the Theory and Practice of Midwifery*.  
Wellcome Images

British physicians turned their attention to the anatomy and physiology of fetal development and conducted dissections—perhaps made possible by trade in freshly murdered cadavers in major British cities.

William Smellie, a Scottish physician, produced some of the most accurate illustrations and descriptions of birth then available. Smellie's *Treatise on the Theory and Practice of Midwifery* promoted the presence of male doctors into the traditionally sex-segregated birthing room. European medical schools began offering lecture series in midwifery leading to a certificate. The vast majority of women, especially in rural areas, continued to be delivered by traditional female midwives, but man-midwives were newly equipped to handle rare emergencies in obstructed delivery. Obstetrical forceps became more widely available over the course of the eighteenth century, though they were still cause for alarm; Smellie recommended that “operators” carry the disarticulated forcep blades in the side-pockets, arrange himself under a sheet, and only then “take out and dispose the blades on each side of the patient; by which means, he will often be able to deliver with the forceps, without their being perceived by the woman herself, or any other of the assistants.”<sup>3</sup>

In the shop, we rarely talk about the other equipment male doctors carried, for fear of upsetting visitors or creating controversy. Men continued to carry the “destructive instruments” long used to extract fetuses in order to save the mother. With forceps man-midwifery moved in the direction of delivery over dismemberment, but it remained an inescapable task before caesarean sections could be performed safely. Despite this avoidance, it periodically pops up, and forces me as the interpreter to rely on innuendo. One particularly discomfiting instance involved an eleven-year-old girl who asked about babies getting stuck during delivery. After explaining how forceps were used, she asked, “What if that didn’t work?” The best I could come up with was, “Then doctors had to get the baby out by any means necessary so the

woman wouldn't die." She sensed my evasion and pressed on—"How did they do that?" Unwilling to explain how doctors used scissors and hooks in front of a group including children, I turned a despairing gaze on her mother. Fortunately, she sensed my panic and ushered her daughter outside; what explanation she offered, I do not know.

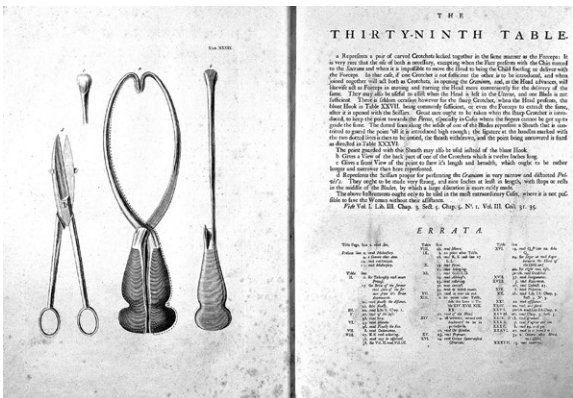
Most women, fortunately, experienced uncomplicated deliveries and did not require the services of a man-midwife. Birth was not quite so fraught with peril as many visitors believe. While I've had one visitor inform me that all women died in childbirth, human reproduction generally works quite well. American colonists enjoyed a remarkably high birthrate. While there were regional variations, maternal mortality was probably about two percent—roughly ten times the maternal mortality rate in the United States (which lags significantly behind other developed countries). Repeated childbearing compounded these risks; approximately 1 in 12 women died as a result of childbearing over the course of their lives. Childbirth was a leading cause of death for women between puberty and menopause.

Improvements in antisepsis, prenatal care, fetal and maternal monitoring, and family planning over the past two centuries have pulled birth and death further apart. Fear of death altered how parents related to infants and children, how couples faced childbearing, and reproductive strategies. While this fear persists today, it is far more contained than it was two centuries ago.



Americans today live in a world of medical privilege unimaginable to their colonial forbears. It's not because we are smarter or better than we were two hundred and fifty years ago. We are the beneficiaries of a series of innovations that have fundamentally altered how we conceptualize the body and reduced once-common threats. Guests in the Apothecary Shop today think of headaches as their most frequent medical problem because so many pressing diseases have been taken off the table.

From this privileged perspective, it's all too easy to look down on those who believed in bloodletting



Examples of some the “destructive instruments” man-midwives carried.  
Wellcome Images

or resorted to amputation for broken limbs. But the drive to do something to treat illness, to seek explanations for disease as a means of control, to strive to hold off death—these impulses haven't changed.

As I often tell visitors—give it two hundred and fifty years, and we'll look stupid too.

Notes

- 1. Salicin, the compound from which aspirin is derived, occurs naturally in willow trees and was used in Native American and English folk healing, but was not included in English pharmacopeias.
- 2. Alcohol not only thins blood, but causes blood vessels to dilate and to constrict more slowly, increasing blood loss.
- 3. The Historical Collections at the Claude Moore Health Sciences Library at the University of Virginia have digitized and made publicly available William Smellie's rare 1754 publication, *A Sett of Anatomical Tables, with Explanations, and an Abridgement, of the Practice of Midwifery*. Thirty-nine tables illustrate various abnormal birth presentations and the tools of midwifery, along with Smellie's directions. For a brief introduction to Smellie and the link to the tables, visit: <http://exhibits.hsl.virginia.edu/treasures/william-smellie-1697-1763/>





## The Aviator's Heart

by Felipe Fernandes Cruz

Amidst hangars full of airplanes and aviation memorabilia, visitors to Brazil's National Air and Space Museum encounter a much stranger object. It is a gold plated celestial globe, supported by a marble statue of an Icarus-like figure with its arms raised skyward. There is a human heart inside the globe, preserved in formaldehyde. The heart of a man called Alberto Santos-Dumont. Brazilians consider him to be the true inventor of the airplane.

The heart of the aviator is a relic from a time when personal flying machines roamed the streets of Paris, and people were afraid that marauding anarchist Zeppelins might destroy their cities. It was

the turn of the twentieth century, a golden age for inventors and tinkerers.

Flying today means frustration at airline counters, waiting in long lines to be patted down, bad food and expensive drinks. But in the first decade of the twentieth century, aviation evoked a radical new world. Some even argued that humans would physically evolve by being airborne. They imagined a future where everyone might own a flying machine. Aeronauts were great celebrities, much like astronauts during the space race. And perhaps no one was a bigger celebrity than Alberto Santos-Dumont—who used to fly his personal airship over the streets of Paris, sometimes just to



go to lunch. To understand why his heart is now in a museum, we must first understand his life, and his world.



## A Flying Brazilian in Belle Époque Paris

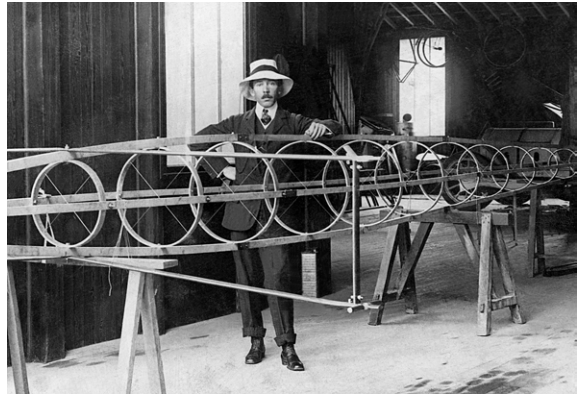
Santos-Dumont lived in Paris, where he settled in 1897 and began his aeronautical experiments. As a child, growing up in a São Paulo coffee plantation reading Jules Verne, he launched small balloons and built a small rubber band powered airplane—it seems that toy airplanes predate the real thing. Santos-Dumont's passion for the air was sealed at the age of fifteen, in 1888, when he first witnessed a manned balloon and parachute demonstration in São Paulo.

When he moved to Paris for his engineering education, he was set on the idea of flying in a balloon. Paris was, after all, the global center for ballooning. After many rejections, he found two Parisian balloonists willing to help him build a craft. Santos-Dumont named it *Brasil*. He once even took off with a friend, packing a picnic of cheeses, fruit, hardboiled eggs, roast beef, chicken, ice cream and cake. And, naturally, champagne—which they found to be extra bubbly due to the low pressure at their altitude.

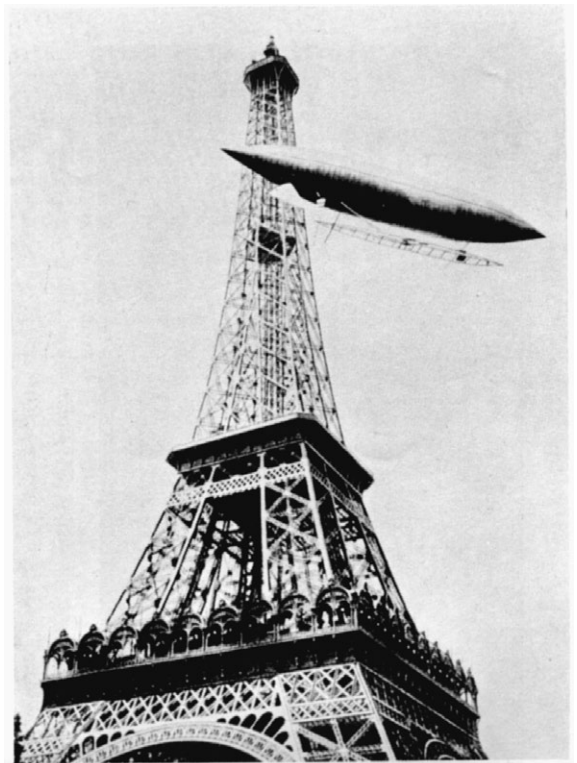
Soon he began experimenting with the internal combustion engines of the cars that were just starting to emerge on the streets of Paris. With these new engines, he started creating dirigibles, much like blimps or zeppelins, essentially maneuverable (cigar-shaped) balloons with engines and rudders.

Despite the dangers of mixing rudimentary combustion engines that generated sparks and a balloon envelope full of flammable hydrogen, Santos-Dumont kept on tweaking his methods and creating new dirigibles, naming each new and improved airship with a number (No. 1, No. 2, No. 3). While they had already been tested as a concept, he was the only person in the world flying a dirigible airship at the close of the nineteenth century.

In April 1900, Henri Deutsch de la Meurthe, a French petroleum magnate and member of the



Santos-Dumont working on dirigible No 18.  
[dominiopublico.gov.br](http://dominiopublico.gov.br)



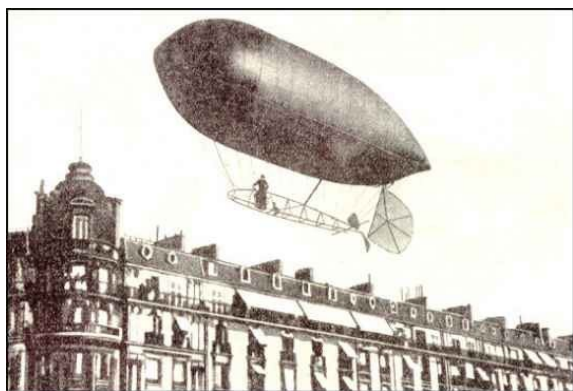
Santos-Dumont rounding the Eiffel Tower in his bid for the Deutsch prize.  
[Wikimedia Commons](#)

French Aero Club, created a prize to foment the development of aviation. The prize was to be administered by the French Aero Club and fifty thousand francs were to be given to the first aeronaut to fly a specified trajectory around the Eiffel Tower in less than thirty minutes. On October 19, 1901, Santos-Dumont won the French Aero Club's Deutsch Prize, rounding the Eiffel Tower and landing at Parc Saint Cloud in twenty-nine minutes and thirty seconds:

The air-ship, carried by the great impetus of its great speed, passed on, as a race-horse passes the winning post, as a sailing-yacht passes the winning-line, as a road-racing automobile continues flying past the judges who have snapped its time. [...] I then turned and drove myself back to the aërodrome. [...] I did not know my exact time. I cried: "Have I won?" And the crowd of spectators cried back to me: "Yes!"

He was greeted by a jubilant crowd. But the other Aero Club judges squabbled over the particulars of the timing rules, and his prize was not declared official. While the Aero Club members deliberated, Santos-Dumont did not fail to deliver in his showmanship—he declared publicly that he would give away the entire prize money—part of it to his staff and assistants, and the rest for the aid of the poorest Parisians.

The Parisian press and public pressured the Aero Club, and soon the prize was made official. Santos-Dumont's donation of the prize made him even more popular. The aviator's flights attracted



The *Baladeuse* (Wanderer), Dumont's personal airship which he often flew around the streets of Paris.

[Wikimedia Commons](#)

Santos-Dumont would then land in front of his favorite café, tie the guide rope much like one might tie a horse to a hitching post, and walk in for a meal.

enormous crowds. Journalists flocked from all over Europe and the United States to interview him. The *New York Herald* sent a journalist to Paris exclusively to cover the airship flights. Other famous contemporary inventors, like Thomas Edison and Samuel Langley, commended his triumph. They were not alone—in a visit to the United States, he was even invited to eat at the White House, where Theodore Roosevelt asked him about taking his son aboard an airship.

His celebrity as the best known aeronaut in Europe, and perhaps the world, was sealed. Santos-Dumont was as close as one could get to a rock star in Paris.

Imagine the frenetic pace of life in belle époque Paris. Automobiles appearing on the streets, attracting huge crowds. The telegraph bringing news from all over the world. Cafés playing phonographs while their patrons drank absinthe and cocaine wine. Now imagine a Parisian walking the streets in the early morning, in a time where an automobile was still a fascinating novelty, and then suddenly, a small airship appears floating just above the street. A crowd would gather to see the aviator driving his *Baladeuse* (The Wanderer), a personal sized dirigible, over the streets as if it were a carriage or automobile. Santos-Dumont would then land in front of his favorite café, tie the guide rope much like one might tie a horse to a hitching post, and walk in for a meal. It must have been quite a sight. Going to the café was not the only time Santos-Dumont used his *Baladeuse*—he was also fond of surprising his friends by landing in front of their porches with his airship.

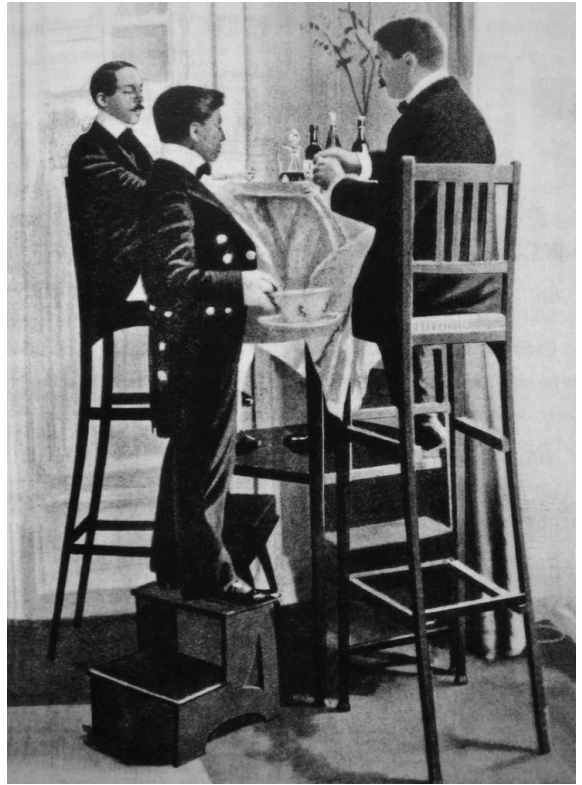
His fame even fed consumerist impulses. His countenance appeared on cigar boxes and dinner plates. Toy replicas of his airships moved off the shelves at a brisk pace. Even bakers joined in, selling airship-shaped cakes with the colors of the Brazilian flag. Fashionable boutiques sold clothing and accessories inspired by his meticulous and impeccable style. Louis Cartier, a friend of his, even made a special wristwatch to use during flight, so he would not have to pull out his pocket watch while handling the controls. In fact, Santos-Dumont was responsible for making the wristwatch a fashionable accessory among men—it was mostly a women's item until that point.

There were compositions, poems, odes and speeches galore in his honor. Henri Deutsch de la Meurthe composed a waltz in honor of Santos-Dumont, simply titled "Santos." The chairman of the United Kingdom Aero Club, Major-General Lord Dundonald, perhaps best expressed Santos-Dumont's popularity in a banquet given in his honor in London:

"When the names of those who have occupied outstanding positions in the world have been forgotten, there will be a name which will remain in our memory, that of Santos-Dumont."

Santos-Dumont did indeed keep fine and noble company at the time, having the highest of European elites as guests in his Parisian home, where he would treat them to "aerial dinners." His house was outfitted with dinner tables that were well over any person's height. The chairs were mounted with ladders so that his esteemed guests could climb up to their exaggeratedly tall seating arrangements and dine some ten feet high up in the air. When guests inquired about such peculiar eating arrangements, Santos-Dumont responded coyly (while being so adept at public showmanship, he suffered from crippling shyness) that he just wanted to share with his guests the joy of flying. His guests included European royalty, international journalists, and other celebrities. Hard to imagine barons and baronesses sitting on ten-foot-tall chairs for dinner.

His showmanship and desire to share the feeling of flight led him to be part of many "firsts" in aviation history. In 1903, Aida de Acosta, a wealthy



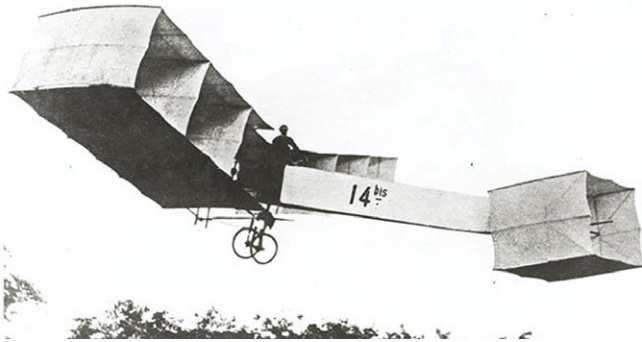
An aerial dinner table at Santos-Dumont's residence.  
Via Krapak Lab



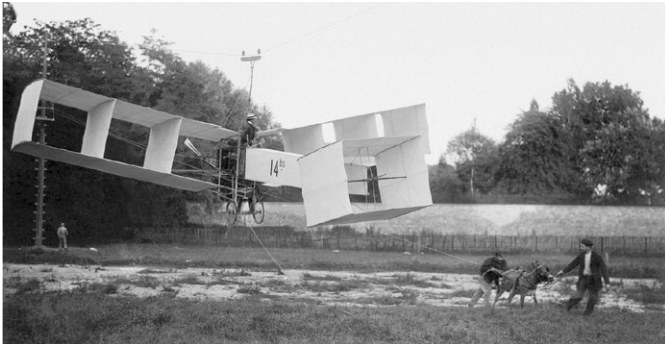
Aida de Acosta piloting the airship. As she landed in the middle of a polo match, everyone cried "Santos! Santos!" Once they realized it was a woman, the crowd started yelling "C'est une Mademoiselle!"

[Wikimedia Commons](#)

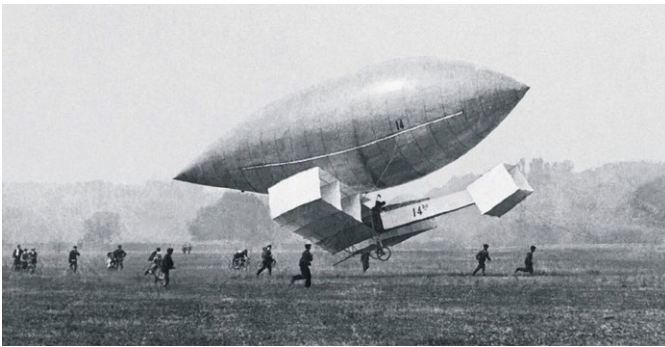




The 14-bis aircraft, the first heavier-than-air flight in Europe.  
Wikimedia Commons



Testing the 14-bis by using a donkey as source of propulsion.  
dominiopublico.gov.br



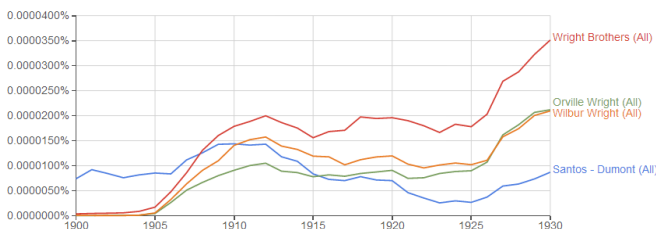
Testing the 14-bis by using a dirigible.  
Wikimedia Commons

Cuban-American woman of nineteen years was visiting Paris, where she met Santos-Dumont. Fascinated with flying machines, she expressed her desire to pilot the airship herself. Surprisingly, he agreed—and after a few lessons, allowed her to fly it around Paris while he followed her on a bicycle shouting instructions from below (airship no. 9 only had a 3 horsepower engine and could barely conquer a light breeze). This made Acosta the first woman in history to fly a powered aircraft of any sort, some six months before the Wright Brothers first took flight in the United States.

But he also faced criticism that the airship was an impractical flying device, seen more and more as a novelty rather than a practical mode of air travel. So Santos-Dumont soon turned to the problem of heavier-than-air flight: the airplane as we know it today. Much like many of the aviation firsts at the time, it was fomented by prizes, especially the Archdeacon prize for the first heavier-than-air craft to fly a distance of twenty-five meters.

On October 23, 1906, Santos-Dumont won the Archdeacon prize by flying his Hargrave box kite inspired aircraft at Bagatelle in Paris. He was hailed by many in Europe as the first to fly, despite the fact that the Wright Brothers had achieved such a feat three years earlier in the United States. But Orville and Wilbur Wright kept their invention under wraps, avoiding any public exhibitions while they sought a patent. Most aeronauts in Europe considered them to be bluffing.

The Wright Brothers would eventually overtake Santos-Dumont as claimants of the first flight. In 1908, they finally demonstrated their aircraft publicly in Europe, assuaging many of their skeptics. A search on Google's Ngram Viewer tool, a textual statistical analyzer that uses the entire corpus of the Google Books database, clearly shows the rise of the Wright Brothers and decline of Santos-Dumont in the Anglophone corpus. (See figure in the margin.)



But if Santos-Dumont's popularity and importance as an inventor was diminishing in global aeronautical circles, his star was just beginning to rise in the Brazilian imaginary. There he was a national hero, a larger than life figure, a demi-god.



## The Creation of a National Hero

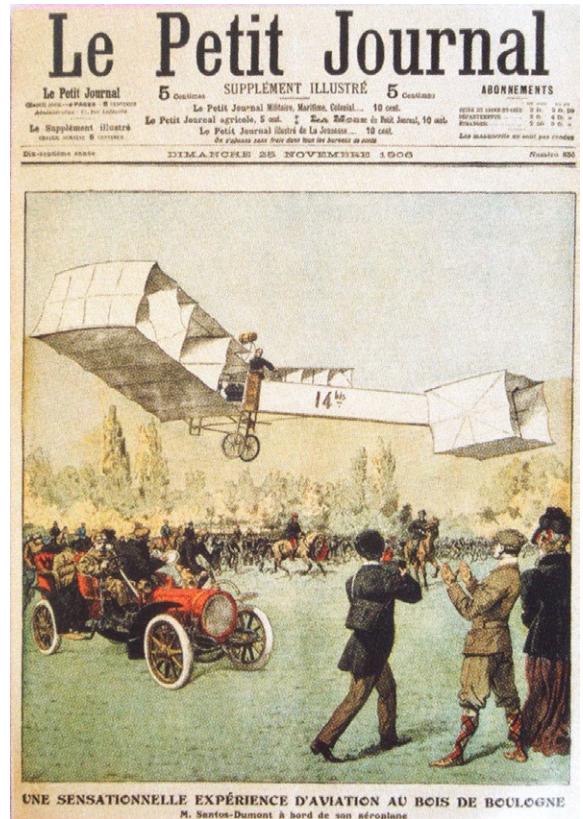
Europe bowed itself before Brazil  
And in a meek tone exclaimed congratulations  
In the skies a new star shone  
There appeared Santos Dumont.

Hail this star of South America  
The land of the brave Indian warrior!  
The greatest glory of the twentieth century  
Is Santos Dumont, a Brazilian!

—Eduardo das Neves, *The Conquest of Air* (1902)

It all started with the pigeons. Military messenger pigeon number 565, announced at 7:12 am that the fortresses were firing their cannons to greet the steamer *Atlantique*. At 7:30am, pigeon number 325 announced that the Brazilian Navy's tugboat, *Marechal Vasques*, had arrived next to the *Atlantique*. Such was the excitement and anticipation for his arrival in Rio de Janeiro that a navy vessel carried one hundred messenger pigeons to send updates of the *Atlantique's* progress through the ocean. Finally, pigeon number 595 announced what the crowds amassing in Rio de Janeiro's harbor were waiting for: "Santos Dumont is sitting at the bow, with a wicker hat, using it to reply to the greetings of the military school, the students of which are the first to greet the great aeronaut."

It was September 1903, and Santos-Dumont was visiting Brazil for the first time as the world's most famous aeronaut. His reception was nothing short of a massive celebration for a national hero. A journalist claimed it was the "largest popular gathering seen in the capital, which received yesterday the great Brazilian." A holiday was declared, and all public institutions were closed, with their façades lit with electric lights for the reception.



Magazine celebrating the 14-bis flight.  
[Wikimedia Commons](#)

Incessant shouts of "viva!" followed the large procession, which moved slowly through the crowds. Flowers were thrown upon his horse-drawn carriage at an amazing rate, with one observer noting that every time Santos-Dumont stood up, he looked like a bird emerging "from a nest of flowers." Every balcony in the route of the parade was packed, and from them rained down a profusion of rose petals and green and yellow confetti.

The celebrations reached a feverish pace. At some point, the crowds attempted to release the horses from his carriage and pull the vehicle themselves. When he left his carriage to speak at one of the many grandstands set up for speeches in his honor, he had to escape the crowds by running and jumping over the median and sidewalk benches, prompting a journalist to comment that he was "agile like a deer." The number of speeches and odes proffered seemed to also multiply—leading the same journalist to complain that there were just too many, a total of thirteen speeches in a short stretch of the parade route.

The celebrations were certainly as colorful as they were massive—reminiscent of the kinds of parades that received returning astronauts during the early space race, perhaps even more flamboyant. But what does this reception tell us about Brazilian society? What did Santos-Dumont's achievements, and their reception throughout the world, mean to Brazilians?

Let us take one of the many honors he received as an example. In one of the many celebratory events, a school girl approached him with a bouquet and a message from her fellow students:

Sir, the children from our school are filled with joy to glorify men that have conquered immortality, men that, through their work, their studies, elevate the name of their country in the face of the civilized world. You are one of these great men, a grandiose figure! We, Brazilians, as all sons of this majestic country, salute you!

And there lies the importance of Santos-Dumont in the Brazilian imaginary, an importance that would continue and evolve over the next decades—his power to *elevate the name of their country in the face of the civilized world*.

Santos-Dumont continued to impress the “civilized world.” His aeronautical exploits allowed people to imagine a new world where air travel might become a practical means of transportation. But for Brazilians, he did much more than elicit a vision of a fantastical world of flying machines. He allowed them to imagine themselves as citizens of a glorious, modern nation—an equal among the world's powers.

This is particularly true if we consider the context of Brazil's status in the world at the time. The country was just emerging from a nineteenth-century dominated by monarchy and slavery. When Santos-Dumont won the Deutsch prize for circumnavigating the Eiffel Tower in his No. 6 dirigible in 1901, Brazil had only been a republic for a mere twelve years, and had abolished slavery only thirteen years before (the last country in the western hemisphere to ban the ownership of humans). The country's economy was still centered on cash crops that had long been enabled by slavery, namely its sugar and coffee exports.

Santos-Dumont himself grew up in a coffee plantation, and in his autobiography, he claims that his love of machinery and engineering stemmed from working on all the advanced equipment at the plantation. He was also quite aware that Europeans or Americans might think just the opposite, and to dispel such stigma he made sure to tell them otherwise:

Inhabitants of Europe comically figure those Brazilian plantations to themselves as primitive stations of the boundless pampas, as innocent of the cart and the wheelbarrow as of the electric light and the telephone. [...] I can scarcely imagine a more suggestive environment for a boy dreaming over mechanical inventions [...] I think it is not generally understood how scientifically a Brazilian coffee plantation may be operated. From the moment when a railway train has brought the green berries to the works to the moment when the finished and assorted product is loaded on the transatlantic ships, no human hand touches the coffee.

There lies the importance of Santos-Dumont as a national idol. He allowed Brazilians to imagine themselves rid of the stigma of backwardness. In the Brazilian imaginary, the nation had just given birth to the greatest technological innovation in history. Santos-Dumont was, to his contemporary compatriots, a ticket to an elite club of nations.

But his flying days were soon coming to an end. After his success with heavier-than-air flight, he eventually produced aircraft no. 20, the *Demoiselle*. Much like his personal airship, this was a small airplane, the structure of which centered around one single piece of bamboo. It was small and light, and could be carried in the back of his car. But in January 1910, one of the cables holding the wing collapsed, and he crashed from a hundred feet in the air. He survived, but serious damage was done. He soon fell ill, suffering from vertigo and double vision. A doctor diagnosed him with multiple sclerosis. His flying days were over.

He continued tinkering with many other inventions. One of them was a set of motorized skis to bring him up the mountain—think of it as a personal ski lift, back when there were no ski-lifts at all. There was also a slingshot-like device to throw



life preservers from a ship (perhaps inspired by his own experience of crashing an airship in the ocean outside of Monaco). He also created a device for dragging treats around a race-track, to keep racing greyhounds enticed.

But his life was never the same. Flying was his passion. Soon, Santos-Dumont became severely depressed and was mostly a recluse. Despite the fact that he had once volunteered his services to the French military in the event of war (unless it was a war against any nation of the Americas), he now lobbied governments to demilitarize airplanes. The notion that aircraft, “his babies,” were killing people, seemed to severely impact his psyche. He spent most of the 1920s in various sanatoriums in Switzerland and France.

In a visit to Rio de Janeiro in 1920, Santos-Dumont decided to dig his own grave. He selected a plot at a prominent cemetery. He then ordered a replica of the statue that was built in his honor in Paris to be placed at his grave site. He then proceeded to dig, insisting that the soil had to be removed by his own hands. He transferred the remains of his parents to the site, leaving space between them for his own burial.

He left again for a sanatorium in Switzerland, his mental health deteriorating. At one point, according to biographer Paul Hoffman, he even attempted to fly again by strapping wings to his arms and adding a small engine to a backpack. He was stopped by a psychiatric nurse. Needless to say, he was not quite himself. By 1928, he felt well enough to go back to Brazil. Even if much of the world had forgotten him, he was still received with a hero's welcome in Brazil.

Unfortunately, the hero's welcome was rather tragic. As his ship pulled into the harbor in Rio de Janeiro, an aircraft made a flyover to greet him. The plane had been baptized “Santos-Dumont” and carried some of Brazil's most prominent scientists. It was the first time Brazil had airplanes to receive their aeronautical hero. But the plane exploded, plunging into the Guanabara Bay—taking with it Brazil's scientific elite. He never recovered from this tragedy.



Mme Porges, championne de France de ski, équipée avec le moteur portatif de Santos-Dumont.

Santos-Dumont's personal ski lift, with a power source attached as a back pack.

He memorized all the obituaries, and attended all twelve funerals. He once again visited his own gravesite, which he had dug just eight years earlier. Soon Santos-Dumont returned to a Swiss sanatorium.

In 1931, concerned for his health, his nephew went to Switzerland to retrieve him and bring him to Brazil. His doctors recommended that he stay in the tranquil beach resort of Guarujá. But in 1932, civil war broke out in Brazil. The state of São Paulo rebelled against the federal government and its new president, Getúlio Vargas, who had seized power in 1930. This was the first military engagement in Brazil that prominently featured military aircraft.

It seems that the use of the airplane by Brazilians to kill other Brazilians severely depressed him.

According to the testimony of the elevator operator at the hotel, the last person to see him alive, Santos-Dumont's last words were “I never thought that my invention would cause bloodshed between brothers. What have I done?”

In a visit to Rio de Janeiro in 1920, Santos-Dumont decided to dig his own grave.



The globe where Santos-Dumont's heart is kept.

Felipe Fernandes Cruz

He was known as an impeccable dresser, a fashion trendsetter. But he had not worn a suit for many months during his severe depression. He went into his closet, and donned a suit. He went into the bathroom. He then found two red ties he used while flying in Paris. He tied them around his neck, once again looking like the debonair bon-vivant aeronaut he once was in the city of lights. He stood in a chair. But this time, he let the chair (not a seven-foot aerial dinner chair, just a regular chair) slip from under him. The fashionable red tie tightened around his neck. For a man who so many times defied gravity, he now just let gravity do its work.

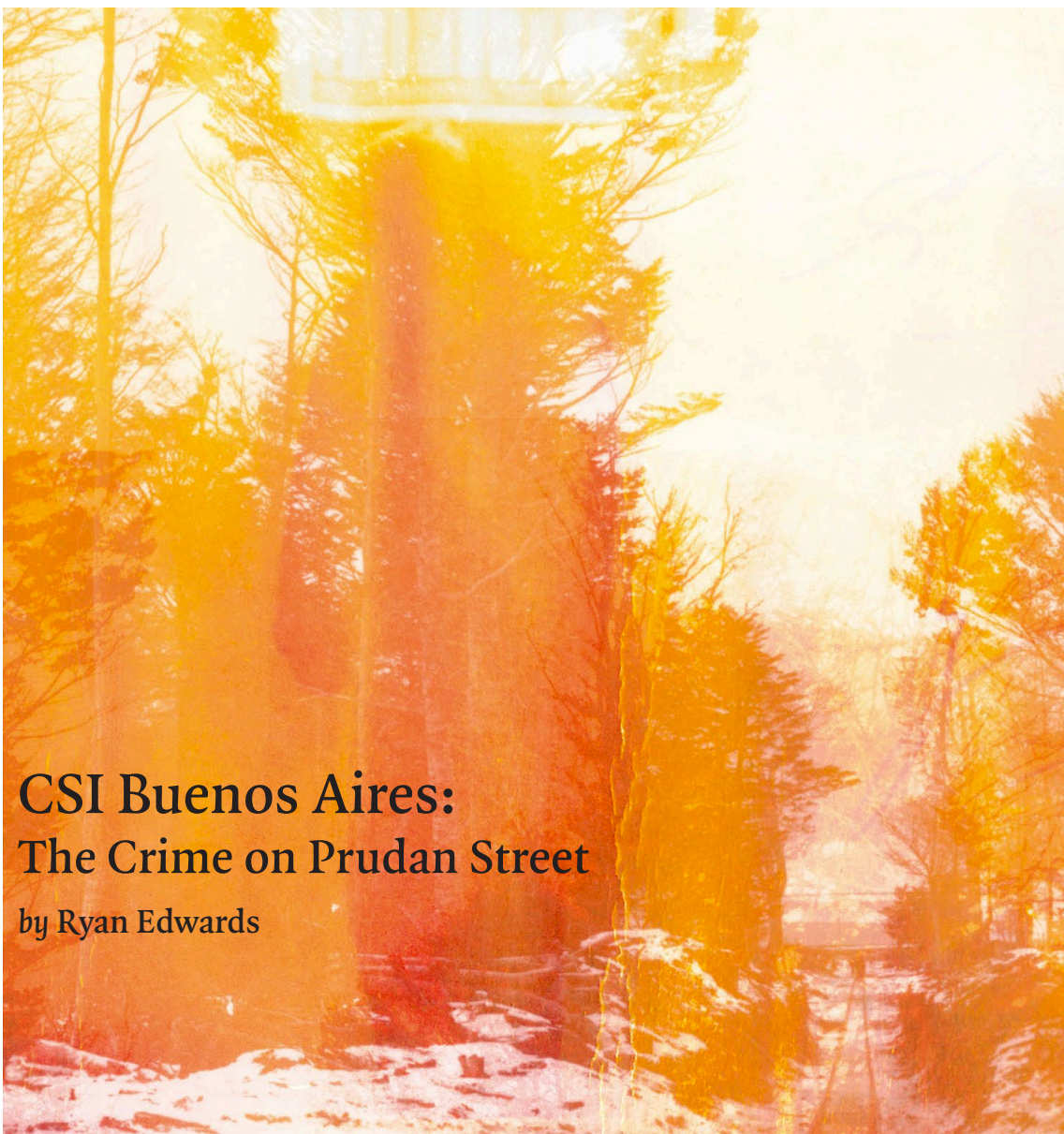
It was July 23rd, 1932. Santos-Dumont hanged himself in Guarujá. He died closer to home, yet far away from his days of glory in Paris.



Brazilians could hardly admit that their hero had killed himself. The authorities obscured that fact, claiming cardiac arrest. The medical examiner knew better. But he was also left alone with the body for just long enough ... just long enough to remove his heart, and preserve it in a jar full of formaldehyde. Just over a decade later, the doctor felt some remorse. He attempted to give the heart back to the Dumont family.

But they would not have it. It must have been too painful.

So the heart was donated to the Brazilian government. Eventually, it was put in a display at the Air and Space museum. And it stands there to this day. A religious relic in the temple of aviation. A small piece of one of the most beloved Brazilians in history: a saint, as far as any Brazilian is concerned. And what other church could be a better place for the heart of Saint Santos-Dumont.



## CSI Buenos Aires: The Crime on Prudan Street

by Ryan Edwards

Ester Naddeo was dead. She had been living at 127 Calle Prudan in Buenos Aires for about four months. But on Sunday, the ninth of January, 1910, her corpse was removed from the apartment by police. She was just 33 years old.

In the following days the incident would simply be referred to as “El Crimen de la Calle Prudan.” It is evident from its title that this incident was public knowledge, an ephemeral shorthand. One could utter these words in early 1910 Buenos Aires and listeners would know exactly what was being discussed. And yet, there was nothing particularly interesting about the case, at least nothing extraor-

dinary. Instead, it was the seemingly ordinary way in which the story was reported that warrants our attention. “The Crime on Prudan Street” is one of many headlines from that era that reveal a deeper history of popular interest in crime dramas, one that feels very familiar today.



I sat one night re-reading and transcribing newspaper reports on the incident after a day in the archives in Ushuaia, Argentina (nearly 2,400 kilometers south of the crime scene). While channel surfing to find some appropriate background



noise for my night's work, I noticed that so many of my options were crime shows. From *Bones* and the *CSI* series to one of the *Sherlock Holmes* movies and its small-screen incarnation, *Elementary*, these dramas aired in English with Spanish subtitles or were dubbed in a neutral Spanish for a diverse group of Latin American audiences. I was amazed at how similar the accounts from my 1910s newspapers were to those that I was watching (or not watching) a century later. The premises, questions, and cliffhangers, my archival photos of mug shots and crime-scenes—they all read like scripts from contemporary Hollywood. These shows, made in the United States and enjoyed in faraway countries like Argentina, were not solely representations of American pop-culture exported abroad, nor were they simply a sign of current Argentine interests—this is a continuation of sorts.

We are all familiar with *Sherlock Holmes*, one of the first and most treasured products of this era, whose fictional investigations captivated audiences in greater Britain and beyond. Indeed, silent films were already being made of Sir Arthur Conan Doyle's character in the 1910s. But while detective innovations such as fingerprinting were being discovered by Englishmen in the colonies and refined by police teams in London at the turn of the century, they were simultaneously being perfected across the Atlantic in Argentina. So too were the proposal and creation of identification cards to be held by immigrants and criminals that included the carrier's anthropometric and biographical data. Argentina, after all, was one of the world's epicenters for modern criminology during this



Basil Rathbone as *Sherlock Holmes*, 1939.  
Wikimedia Commons

era. Embracing these new methods, news outlets as well as popular magazines invited readers along to investigate crimes by tracking and reporting on the operations of this fledgling yet burgeoning field of criminal experts. When *La Prensa* asked, “Did Arnold murder señorita Naddeo, and were his wife and the mulato his accomplices?” it was not simply a rhetorical question. The police were on the case, and so was the public, reading along in their living rooms, cafes, and trolley cars.

For those following Naddeo's murder, a scrapbook of cutouts from public sources could start to look as detailed as a police file. Newspapers and magazines provided all of the available information, including a photo of the front façade of 127 Calle Prudan and a blueprint of its interior floorplan, which numbered the various rooms within the building so that readers could visualize the crime scene and recreate the series of events for themselves. Police released home photographs obtained from the scene, including one of the now departed señorita Naddeo gowned in black and a photo of her next door neighbor, the adolescent Emilia Gurruchaga. Gurruchaga had witnessed a suspicious character exiting the home. “The mulato,” as he was named in these accounts, appeared sallow and poorly dressed. After an interview with Emilia's father Teófilo, readers learned that one could hear everything that happened next door due to the design of the building.<sup>1</sup>

But what did the neighbors hear?

Around noon on the day of the crime, Arnold's wife Rosario Cesárea Gómez had encountered Teófilo's wife Josefina Gurruchaga, who had heard Naddeo screaming, but Gómez assured Gurruchaga that her husband Enrique was tending to the matter. If señora Gurruchaga had known the truth of what had happened, *La Prensa* noted, the suspects would have been apprehended immediately. Instead, she had been calmed, at least temporarily, though her suspicions lingered. At 4 p.m. Gómez told señora Gurruchaga that Naddeo was away from the home and asked if she could stay with their family for fear of being alone until her husband returned. Around 10 p.m. that evening Gómez left the Gurruchaga's home with “the mulato,” and in the middle of the night, unable to

sleep and with no sign of Naddeo, señora Gurruchaga contacted the police.

Precinct 20a, now located under the Avenida 25 de Mayo overpass, began investigations immediately. Police passed through each room of Naddeo's building. When they approached her kitchen they found the key was still in the lock. Inside they encountered semi-prepped vegetables and other ingredients abandoned on the stove. Naddeo's body lay there in a dorsal position, her head under the stove and her legs half-covered by a trunk of clothing that had been placed atop the young victim. Officers assessed that Naddeo had been surprised, attacked from behind while preparing lunch. She had been strangled with a kitchen towel that was left tied around her neck. Her face showed scars and strain, the coroner later noted, evidence that she had struggled in the moments leading to her death—her moments of dying. Naddeo's room had been ransacked, clothing and other items tossed about. All her valuables seemed to be missing. On the bed lay bank receipts and checks.

This was a robbery and homicide, but were both premeditated or did one hastily follow the other? Publications posed such questions to their readers as they introduced the primary suspect: Enrique V. Arnold.

Police quickly moved to Arnold's kitchen where they found two plates of rice soup, bread, and an empty bottle of Italian wine. They traced that afternoon's timeline and discovered that the wine had been purchased at a nearby shop after neighbors had already heard screams. It seemed that a hurried yet casual lunch had been consumed after the incident. This act proved sensational, interpreted by investigators as a display of the cold blood of the murderers. Or perhaps, this was some twisted fantasy that required unraveling. Arnold and Naddeo's relationship, readers learned, had begun much earlier at 118 Culpina Flores where Arnold was living at the time. Later, Naddeo came under the care of Arnold and his wife Rosario, and the two women started to playfully call themselves cousins. Arnold and Naddeo soon engaged in a secret romantic relationship, during which time he learned of her large financial resources. She was a property owner and had family to the southeast in La Plata.



A newspaper portrait of Ester Naddeo.  
*La Prensa*, January 11, 1910

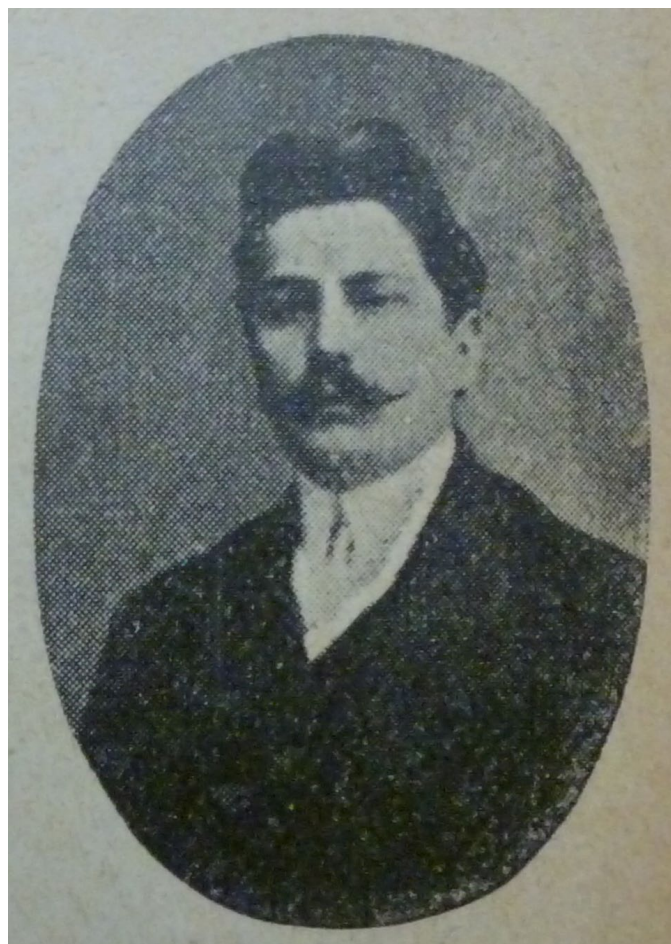
While the first police sweep suggested that all valuables had been lifted from Naddeo's home, still present when they found her body were a pair of gold earrings and an imitation pearl necklace. Investigators also noted that many items found in Arnold's home appeared to have been there before the crime and were acquired with the knowledge and consent of Naddeo. One photo was even signed with affection from Naddeo to her suspected murderer. As the plot thickened, potential motives leapt off each day's freshly printed pages. But where was the primary suspect, Naddeo's married lover? Papers published a photo of a well-dressed and mustachioed Arnold, putting the public on lookout.

Arnold was spotted the morning after the murder at the local barbershop, but he was not apprehend-





The scene of the crime.  
PBT, January 15, 1910



Enrique V. Arnold.  
*La Prensa*, January 12, 1910

ed. Upon exiting, he asked some kids on the street what they had heard about the incident. He quickly went to a friend's home to collect his thoughts after learning that a suspect had been identified. From there Arnold checked into a hotel across from the downtown Retiro train station where he acquired some generic laborer's clothing, further trimmed down his mustache, covered his hands and face with grease, then took the train south to Lanus, just outside of Buenos Aires. Meanwhile, at 5:30 a.m. on the eleventh, two days after the incident, Arnold's wife Rosario appeared unexpectedly at the investigation office where she was promptly interrogated. She had just twenty cents to her name after having been abandoned by Arnold.

Two days after her interrogation police detained the wanted accomplice "el mulato misterioso," Victor Svarna, who also went by the aliases Guardado and Deseado. Svarna was twenty-five years old and had emigrated from Peru to Argentina, where he moved to the outskirts of Buenos Aires. According to police he displayed the typical traits of a child from the slums—cunning and shameless. Svarna was captured in Montevideo, Uruguay, where police had been informed of the crime and provided with photos of the suspects from the precincts in Buenos Aires. The arrest revealed a new clue: Svarna's as of yet unknown link to Arnold. The two had been shipmates in Montevideo. Svarna wore the evidence on his maritime-themed tattooed sleeves. He had fled Argentina to Uruguay after the murder where he was to meet up with Arnold, but penniless and under pursuit, "the mulato" was identified before the two could reunite. With Arnold still missing, the case against Arnold's wife and Svarna was quickly brought before a judge. Upon hearing the gravity of the scenario and their potential jail sentences for their connection to the murder, Gómez fainted.

With the two accomplices apprehended, readers had more to learn about Arnold, the still missing primary suspect. Less than a week had passed since the murder, and each subsequent day brought details to pique the



public's interest. Arnold, it turns out, had had an earlier run-in with the law for selling stolen carts to a Spanish farmer. A different incident, which until then went unreported, was that of a hunting ship captain who came forward to claim that Arnold and Svarna had participated in a maritime robbery during their prior stint in Montevideo. It appears that Arnold was quite good at covering his tracks, and that is exactly what he planned to do once more. According to Svarna, he and Arnold coordinated a clean-up. They would return to 127 Calle Prudan with a cart of plants, dirty and rearrange the scene, and then haul away any remaining evidence. With Svarna's capture, the two never followed through on the plan. Despite these revelations, the story turned dormant for three months, as Arnold did well to evade capture. Finally on April 26th in the Pampa Central, the fertile grasslands outside of Buenos Aires, Arnold was apprehended. Comisario Julio Berdera provided press releases to Argentina's major newspapers, noting that the publication of Arnold's photo, like that of Svarna's, had been helpful in locating the suspect.

Arnold had been lying low by cutting alfalfa outside of the capital. He confessed to his crimes quickly according to Berdera's statement, suggesting that his conscience and paranoia had been getting the best of him. Robbery is one thing, but murder is quite another. Arnold claimed that he and Naddeo had ongoing intimate relations and that his actions had been provoked when she disrespected his honor. Arnold broke quickly, Berdera wrote. Perhaps he was seeking some kind of plea-bargain—the very thought of prison, Arnold had confessed, made him think suicide a better option. Arnold did not take his own life however, and at his trial in September 1911 a judge ruled that Arnold had premeditated the murder. Svarna was sentenced to two years in prison for his role in the robbery and the attempted cover-up of the murder. Arnold was sentenced to twenty-five years in Ushuaia, Argentina's southern penal colony on the Beagle Channel.<sup>2</sup>



So many of our TV dramas end here. The crime is solved, the perpetrator is brought to justice and put behind bars, the credits roll. As the case of



Ushuaia Prison, the year of its closure, 1947.  
 Archivo Histórico Provincial, Río Gallegos

"Calle Prudan" was coming to a close, magazines like PBT ran the newest episodes, like "El Crimen de la calle Anchorena," displaying more building-fronts, murder weapons, and mug-shots. There had to be a new story to tell, a mystery to be solved; more blood, more bodies.

But what happened to Arnold? Though he was terrified of prison life and intent on suicide after his capture, Arnold did not take his own life. Instead, he was locked away in a penitentiary, but not the national penitentiary in Buenos Aires. No, Arnold was exiled to the panopticon penal colony in Ushuaia where he and his fellow inmates were closer to Antarctica than the nation's capital. Commonly referred as *la tierra maldita*, or "the cursed land," the term hardly captures the expletives imbedded in its reputation. There, the condemned labored in thin, damp prison garb marked with their new numerical identities: Arnold became Prisoner 165. Exposed to snow, howling winds, and extreme swings in daylight hours and temperatures, many prisoners died felling timber and laying railroad tracks, living out their days under strict prison regimens.

While many died laboring to build this corner of southernmost Patagonia, some inmates did take their own lives. In Arnold's case, it is hard to say why he chose to endure prison life despite his greatest fears. He penned a deeply reflective poem while in Ushuaia titled "De Profundis," though it never mentioned Naddeo, murder, or suicide. Instead Arnold focused more generally on the human conditions of life and death, on the expe-



Prisoners built the local railroad line that then took them to the timber fields for felling.  
 Archivo General de la Nación

riences of living and dying. He complicated any clear distinction between prison life and a life of freedom by questioning the fundamentals of being. In his Ushuaia jail cell, Arnold wrote, “I am dead to all, yet continue to exist.” He was “buried alive,” yet questioned if he was the only one. What surfaces in this poem is a deeper buried life, suggesting that there was another passing the day that Arnold killed Naddeo, not just that of a young female victim from the world of the living to the world of the dead.

“Life wants death,” Arnold wrote, but so too does “death want life.” It is here that we engage the often-untold part of the crime story. While Naddeo’s corpse was ripe for investigation, what about Arnold’s body—his flesh, his sweat and laboring muscles, his breaths in and out? What did these actions mean for the living dead, *los muertos que caminan*?<sup>3</sup>

Beyond Arnold’s poem, only a few official reports survived—or were ever written—to tell us more of his particular case. These reports would have been beyond the reach of the public, but inmate letters smuggled out of the prison sometimes made it to print. Fellow prisoner Simón Radowitzky, an anarchist exiled for the assassination of Buenos Aires police chief Ramón Falcón in 1909, provided some insight in letters he sent to the *federación obrera regional Argentina* (FORA). This worker syndicate collaborated with the anarchist publisher *La Protesta* to circulate these firsthand accounts. Guards labeled Arnold an intellectual subordinate and placed him in solitary confinement in his cell, Radowitzky noted. His rations were limited to bread and water and a perforated metal grate was fixed in place of his glass cell window so as to deny him light yet expose his body to the hissing winds and bitter cold air brought by Antarctic gales and northern glacial gusts. The infirmary doctor claimed that Arnold was on the verge of death after prolonged weeks spent in these conditions.

This was in 1921, nearly ten years after his arrival in Ushuaia. Arnold petitioned judges in southern Patagonia with regard to his treatment, but to no avail. He still had fifteen years to serve.<sup>4</sup>

But Arnold did not complete his sentence—he died in the Ushuaia penitentiary three years later, in 1924. His cause of death, unlike Naddeo's, was not examined in great length, at least not publicly. When prisoners passed away, the official reports did not pad the language of death. Instead, an opening sentence explained how they were found, and all subsequent references to the individual were prefixed with “ex:” *ex-preso*, *ex-recluso*, *ex-hombre* (ex-prisoner, ex-inmate, ex-man). The tortures endured by these prisoners were not revealed to larger audiences until the 1930s, when reporters and prominent political exiles amplified the voice of the “farthest corner” of Argentina—*el fin del mundo*. Arnold's cause of death is still not entirely clear, though inmates claimed that he died from tuberculosis induced by his treatment and living conditions in Ushuaia.

Arnold's poem “De Profundis” on the other hand, rumored to have been found in his cell when guards noticed his corpse, suggests that he had died much, much earlier. Perhaps in Buenos Aires.

## Notes

1. With access to police files and other archival materials, historians can often fill in many of the gaps that a contemporaneous public could not. Rather than tie all of the loose ends for the case of Calle Prudan, my account here is based exclusively on public sources printed by the newspapers *La Prensa*, *La Nación*, *Tribunales*, and *La Protesta*, and the popular magazines *Caras y Caretas* and *PBT*, to better understand the public's following of the case.

2. The theme of “honor” has been addressed by many scholars of Latin America in recent years. See, Sandra Gayol, *Honor y duelo en la Argentina moderna* (Buenos Aires: Siglo Veintiuno Editores, 2008); Pablo Piccato, *The Tyranny of Opinion: Honor in the Construction of the Mexican Public Sphere* (Durham: Duke Univ. Press, 2010)



Prisoner 623 was found hanging from his cell window early one morning in September 1920.

Museo del Fin del Mundo

3. In addition to crime dramas, it is hard to ignore the imagery of Arnold's poem when thinking about a contemporary show like *The Walking Dead*, in which the “living” find brief sanctuary in a prison while under attack by the “undead.” Arnold claimed, “Los vivos son y serán / Y si mueren, se examinan / son cuerpos que peregrinan / por el misterio empujados / porque hay vivos sepultados / como hay muertos que caminan.”

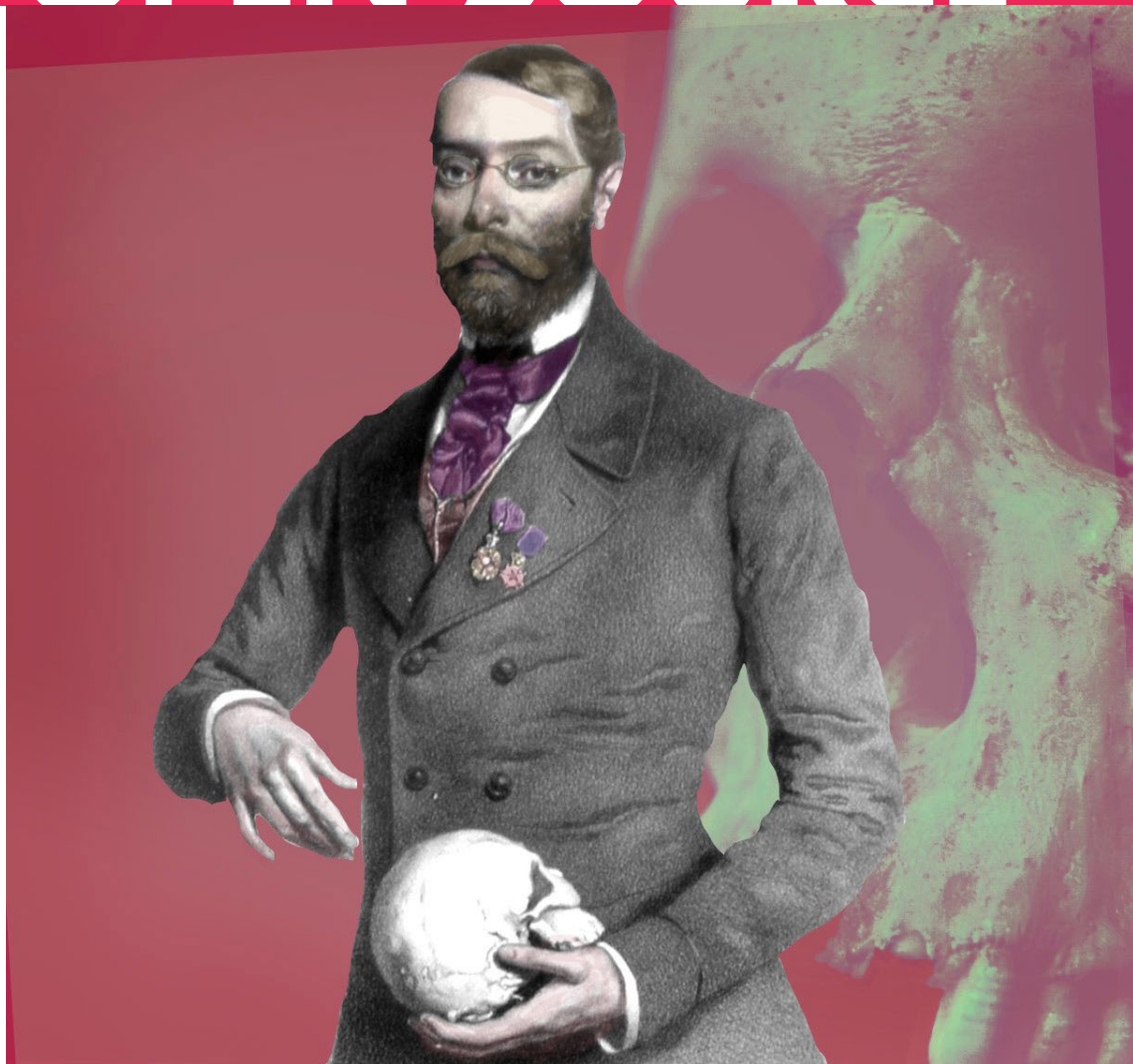
4. Radowitzky was one of Ushuaia's most famous prisoners. He was known 'round the world, celebrated by anarchists and abhorred by authorities. He received a great deal of press, which coincidentally appeared alongside Arnold's coverage as the two events happened within months of each other, though presumably the two did not meet until their exile to Ushuaia. See, Simón Radowitzky, *La voz de mi conciencia: Carta a la federación obrera regional Argentina comunista* (Buenos Aires: Talleres Gráficos “La Protesta.” 1921).



CHAPTER TWO:

# Bodies on Display





## Mozart's Skull: The Hyrtl Skull Collection at the College of Physicians of Philadelphia

Joseph Hyrtl was proud of his hearing organs, and would not sell them cheap.

In 1866, the Viennese anatomist explained to the College of Physicians of Philadelphia that his collection of human and animal auditory bones could not be separated from each other. If Philadelphia wanted his collection—"the pride and ornament of my private museum since the En-

glish, in the exhibition of 1862, styled it admirable"—the college would have to pay \$7000, or about \$104,000 today, for the surround sound experience, as it were. "The fishes and reptiles of the same catalogue are also to be disposed of," he added.

In 1874, the College talked the price down to about \$4,800, and pulled in a lot more besides, including 139 human

skulls that Hyrtl had used to try and debunk phrenology, the pseudoscience that theorized that a skull's shape, size and bumps reflected the character of the mind—and the person—it protected. Today, a wall of those skulls stare down at visitors to the College's Mütter Museum, Philadelphia's most Appendix-y of destinations, overflowing with gruesomely human and humanly gruesome preparations of human skeletal and internal organs, including slices of Einstein's brain. The collection is justly famous, but it takes some upkeep: last winter, the hot gift online—in some circles, at least—was a skull “adopted” from the Hyrtl wall; prospective “parents” paid \$200 for a skull's restoration and remounting.

The story of skull collecting in the nineteenth century is a dark one, rippling with scientific racism and the disquieting means by which many skulls were gathered—even in a collection built to debunk bad science. Many of the Hyrtl skulls, for example, belonged to people who died at a disadvantage: at their own hands, or those of the state, or in jails or poorhouses. Hyrtl also didn't mind employing a resurrectionist (grave robber) or two.

But before we judge, it's best to read the evidence for ourselves. For this issue of The Appendix, ‘Bodies,’ we reached out to our friends at the College, and Annie Brogan, the College's Librarian, reached into their archives for the letters that brought Hyrtl's collection to Pennsylvania's capital. It makes for occasionally banal reading—a collection is a collection, and that means haggling—but there are flashes of the humanity beneath: preparations of placentas and organs injected with tinctures, humans working to ready human tissue for microscopic study.

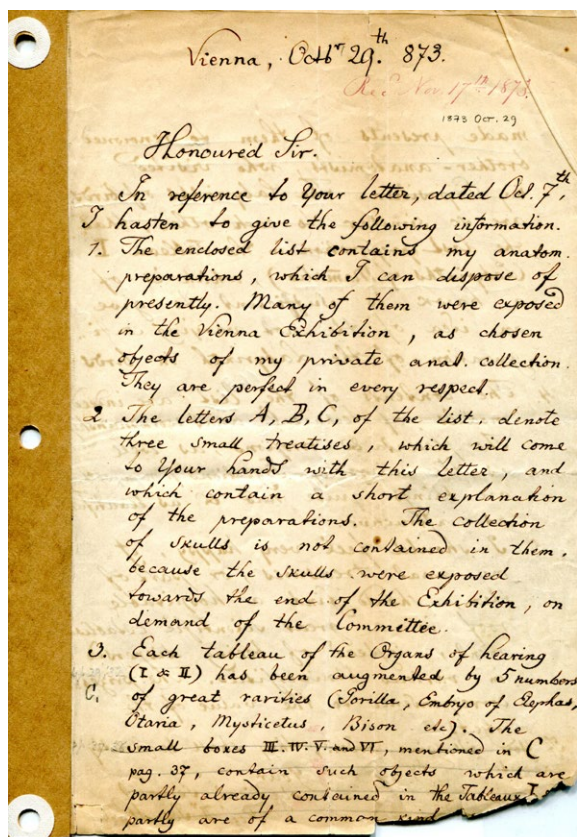
Still more compelling is the catalogue of the collection, which we're also proud to share. Tableaux of the skeletons of crocodiles, breaking their shells, jostle with preparations of six “well mounted” genital organs, showing “the blood vessels of the uterus & Vagina, with Ovary, in pregnancy, [...] the vascular structure of the penis (splendid),” etc.

And of course, the seventy “perfect, snowy-white” skulls of “all the tribes of Eastern Europe,” some of them accused murderers. “It is easier to get the skulls of Islanders of the Pacific,” Hyrtl wrote, “than those of Moslim, Jews, and all the semisavage tribes of the Balkan & Karpathian [sic] valleys. Risking his life, the gravestealer must be largely bribed. My pupils who are physicians to Turkish Pachas [sic], procured most of them for me.”

There is as much inadvertent history in these brief accountings—of power, science, racism, gender, and culture—as there are in whole books.

But, lest it all be grim, there was also what may have been the “Skull of Mozart,” which Hyrtl claimed was “Authentic, without maxilla inferior.” Mozart's hometown of Salzburg offered Hyrtl 200 Thalers for it; Hyrtl wanted 300. It wasn't among the haul that reached the Mütter Museum, though. Mozart's skull is, unsurprisingly, hard to “score.”

Here is Hyrtl's letter on the subject.



Images of the letter appear courtesy of the College of Physicians of Philadelphia

For more on phrenology and skull science in Philadelphia and the U.S., see Ann Fabian, *The Skull Collectors: Race, Science, and America's Unburied Dead* (Chicago: University Press of Chicago, 2010).



Vienna, Oct. 29th. 873

Honoured Sir,

In reference to your letter, dated Oct. 7th, I hasten to give the following information.

1) The enclosed list contains my anatom. Preparations, which I can dispose of presently. Many of them were exposed in the Vienna exposition, as chosen objects of my private anat. Collection. They are perfect in every respect.

2) The letters A, B, C, of the list, denote three small treatises, which will come to your hands with this letter, and which contain a short explanation of the preparations. The collection of skulls is not contained in them because the skulls were exposed towards the end of the Exhibition, on demand of the Committee.

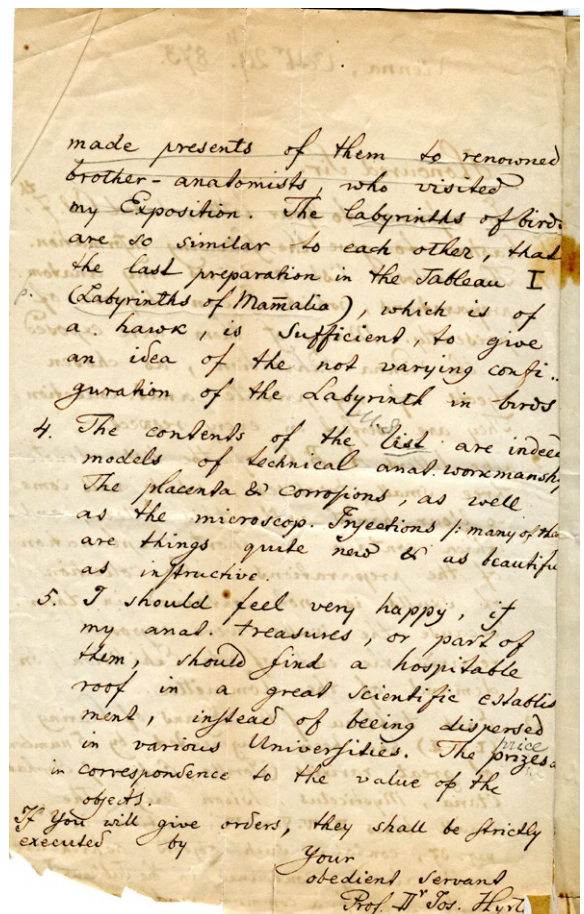
3) Each tableau of the organs of hearing (I & II) has been augmented of 5 numbers of great rarities (gorilla, embryo of elephant, otaria, mysticetus, bison, etc.). The small boxes III, IV, V, and VI, mentioned in C pag. 37, contain such objects which are partly already contained in the Tableaux I [page torn] partly are of a common kind. [Page torn] made presents of them to renowned brother-anatomists who visited my Exposition. The labyrinths of birds are so similar to each other, that the last preparation in Tableau I (Labyrinths of Mammalia), which is of a hawk is sufficient to give an idea of the not varying configuration of the Labyrinth in birds

4) The contents of the list are indeed models of technical anat. Workmanship. The placenta & corrosions, as well as the microscop. Injections /: many of them are things quite new & as beautiful as instructive.

5) I should feel very happy if my anat. treasures, or part of them, should find a hospitable roof in a great scientific establishment, instead of being dispersed in various Universities. The prizes [sic] in correspondence to the value of the objects.

If you will give orders, they shall be strictly executed by,

Your obedient servant  
Prof. II Jos. Hyrtl



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## Osteology.

- 2 large Tableaux with the skeletons of  
gigantic & cartilaginous *Saroid*-  
fish. New Genus *Calamitichthys* /  
For particulars see A. pag. 6-8. The two 500
- 1 Tableau containing the skeletons  
of tailed Batrachia, & representatives  
of non tailed Batr. A. pag. 8 & 9 500  
The Cryptobranch *Siponius* alone was  
bought by myself in London for 30 £. St.  
the *Siren* in 12 £. St. /
- 2 Tableaux with skeletons of Crocodiles  
one in the egg, - one breaching the shell /  
See A. pag. 9 & 10 / The two 400
- 1 Tableau with 14 representatives of *Saurii*  
A. pag. 10 220
- 2 Tableaux with magnificent skeletons of  
Giant Snakes *A. Boa*, *Python*, - one  
very curious & more, in the egg / the two 350.

## Skulls.

- A collection of 30 skulls of all the  
tribes of Eastern Europe. / 2 Hollanders /  
The 30 nations including Austria, 40  
of Kyria, Polonia, Rumania, Wallachia, Turkey  
Serbia, Bosnia, Macedonia, Albania, Monten-  
egro, Greece, the *Slav* Slavians, Ural,  
Island of *Agoria* & *Agoria* etc. etc.  
Many skulls being the same of the same tribe, religion,  
occupation, cause of death (not all) the highest of each tribe is marked among them

## Organs of hearing

- Two carved rosewood Tableaux  
105 pieces, 1 new (one *Sorilla*, whose skull was bought  
in Paris for 1000 francs). The second contains the  
chain of *Ossicula acustica*, some with *Membrana*  
*tympani*, & *tympanic ring*, in all 174 groups  
with 5 new. See A. pag. 4-13. and C. pag. 27-37. The 2000  
These things are indeed worth their money.

## Placenta.

- 24 exquisite specimens of Placenta, injected through  
Arteries & Veins. They were chosen from my  
collection of 120 Placentas for the Exhibition  
See A. pag. 26-31. 600  
To make the collection complete, viz. to represent  
all physiol. Varieties, and partol. processes of  
Placenta, 12 more preparations would be  
necessary. I would single them out to your  
satisfaction of my private Collection for the price of 200

## Genital Organs

- 6 Preparations, well mounted, injected, partly  
corroded. They show the bloodvessels of the  
Uterus & Vagina, with Ovary, in pregnancy,  
the new Vaginal Artery (*Arteria arzygos*), the  
vascular structure of the penis, and the Bulbi  
of Vestibulum Vaginae (Vestibul-Organ) of Kobelt)  
Very fine & instructive Objects. 50

## Corroptions.

- in carved frames, under glassbells  
I singled out of my collection of 135 Corroptions,  
88 specimens (detailed in A. pag. 17-25) for the  
Exhibition of Vienna. They may be called the flowers  
of technical Anatomy, and, as such, were always  
surrounded by a crowd of wondering physicians, and  
many ladies, who showed the same interest for  
them, as for the skulls of Eastern Tribes, which at

The skulls are perfect, snowy-white, teeth  
complete, inferior maxilla moveable, with *dentis* sines  
Such a collection will never be brought together.  
It is easier to get the skulls of Islanders of  
the Pacific, than those of Modlin, Jews, and  
all the *Vermisage Tribes* of the Balkan &  
Karpethian valleys. Risking his life, the  
grave-digger must be largely bribed. My pupils  
who are physicians to Turkish Pachas, procured me  
of them for me. 1000  
2000 of skulls of *Indians* & *Indians* 1000

## Worked Skulls.

- 3 Skulls, on which everything is shown, which  
regards the particular of the framework and structure  
of the skull. One skull, cut in every direction, the  
pieces united by hooks. - *Diploë* prepared, *Cranial*  
*Breschek* venosi, *Arteria* & *Arteria*, roots of three  
organs of hearing, etc. - a masterpiece of anal.  
workmanship. - 60 Thaler. / The second skull  
of a hanged murderer, cut in every sense  
with organs of hearing: 40 Thaler. The third  
of a child, with permanent & deciduous teeth  
laid open, to show the progress of dentition.  
Exterior layer of cranial bones removed. 30th.  
The 3 skulls. 130

## Skull of Mozart.

Authentic, without maxilla inferior. I had an  
offer of 200 Thaler from the native town of  
Mozart. 300.

## Microscopical Injections.

- 5 Boxes, with chosen objects. See A. pag. 32-41.  
Ey and *Embryology* objects. 200  
If more of these Injections were desired, a  
list of them may be perused in B. pag. 20-39.  
There are contained many objects, which hitherto  
have not been in the hands of the Organ of Sight  
and which growths & processes.

exposed only in the last 2 months of the  
Exhibition, by what reason their  
specification is not contained in A,  
which was published at the beginning  
of the world's fair.

This collection costs 1200 Fr. Thal.

13 preparations more, would render  
the collection complete for the principal  
organs of Man & Animals. Price 240 Thal.

All my books, published since the  
Paris Exhibition, splendidly bound, may  
be had for 120 Thal.  
For the list see A. pag. 42. supp.

I observe finally that the costs for wooden  
and white-iron cases, which will reach  
from 40-50 Thaler, are not contained  
in the above mentioned prices. The  
packing will require the utmost care. It  
may be done in 2-3 weeks.

\* perhaps 60, when there  
are many objects to be  
sent.





Tipu's Tiger was arguably the most infamous automaton of the eighteenth century. Wikimedia Commons

# Robot of Jihad? A Guide to Tipu's Tiger

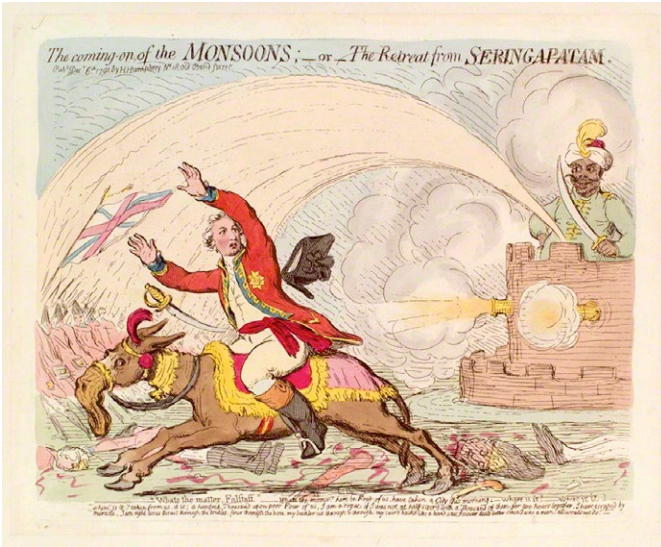
by Blake Smith

An eighteenth-century automaton in the image of a tiger mauling a British soldier, whose groans mingle with his killer's roar, has thrilled millions of tourists and inspired some of the English language's finest poets. It is one of the British Empire's most celebrated prizes, stolen in 1799 from the court of Tipu Sultan, ruler of Mysore. Over the previous half-century, Tipu and his father Haider Ali had repeatedly trounced British armies and flaunted ties to France, Britain's rival superpower. Although France refused to grant Mysore a formal alliance, it filled the Mysorean capital of Srirangapatnam with European mercenaries, artisans, and mechanics, some of whom seem to have contrib-

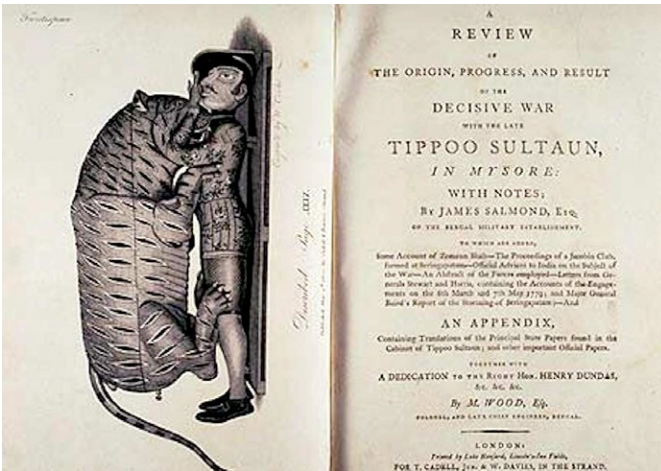
uted to the creation of the machine now known as Tipu's Tiger.

From his rise to power in 1783, and even after his death beneath the walls of his citadel in 1799, Tipu was an iconic figure in Europe, parodied or glorified in cartoons, paintings, and a forged set of memoirs. In South Asia, however, he was the master of his own celebrity. Tipu stamped nearly every conceivable sort of object with the features of his reign's symbol: the tiger. No other rulers in the Subcontinent represented their authority with such flamboyance and insistence. A mechanical man-eating tiger was only the most astonishing





Tipu's treatment in the European press was at times less than flattering.  
National Portrait Gallery



Mark Wood's story, a hit in its own day, haunts contemporary perspectives on the Tiger.  
Wikimedia Commons

example of Tipu's commitment to his brand.

Now Tipu's Tiger is a brand in its own right, with all of the YouTube clips and apps requisite of modern celebrity. An anchor of London's Victoria and Albert Museum, it attracts crowds and the attention of scholars from diverse fields. But however seen and studied, the Tiger remains mysterious. Unlike the countless tiger-headed or tiger-striped swords, guns, and thrones of Tipu's palace, the Tiger bears no inscription. Its pedestal, if it had one, was left behind by British looters, perhaps not valuable or not light enough to be taken.

Little written evidence exists to suggest where the Tiger might have been placed originally, how it might have been used, or why it was built. Did it stand in one of Tipu's private chambers, to amuse the sultan? In an entrance hall, to amaze dignitaries? Or in a storage room, to await its destiny? No one knows—which hasn't kept anyone from speculating. For two centuries, Western writers have guessed the meaning of the spectacular machine. Their answers reveal less about the Tiger than about the persistence of Orientalist clichés and Islamophobia from the Victorian era to our own.



Despite the variety of personalities weighing in, from poets to art historians, two interpretations of the Tiger have predominated. The first holds that it was a monstrous device dreamed up by a tyrannous madman; the second, that it was the plaything of an obsessional man-child. For variety, the two interpretations are sometimes combined.

The earliest British observers maintained that Tipu's Tiger was a vicious simulacrum capable of entertaining only a depraved and cruel mind. Colonel Mark Wood, co-author of an 1800 book on the British defeat of Tipu Sultan the year prior, described the Tiger as a "characteristic emblem of the ferocious animosity of Tippoo."

Wood was referring to Tipu's notorious treatment of his British prisoners of war. Hundreds of British soldiers had been captured by Mysorean forces during the Second Anglo-Mysore War (1780-1784). Tipu kept them imprisoned in the dungeons of Srirangapatnam for years longer than originally stipulated, and subjected them to humiliating and excruciating circumcisions. Circumcision was rare in Europe, and generally associated with 'turning Turk': conversion to Islam. Although Tipu, a pious Muslim, doesn't seem to have had the forced conversion of his hostages in mind, his slighting of British manhood was interpreted as an act of sectarian as well as personal violence. Upon their return to Britain, a number of the former prisoners published widely-read accounts of their indignities, bolstering Tipu's image as a depraved fanatic.

This image was a powerful weapon of British propaganda during the next wars against Mysore, which culminated in Tipu's defeat and death in 1799. Colonel Wood's reaction to Tipu's Tiger was a symptom of Britain's war-time vision of the machine's former owner. Yet as the British came to love watching the Tiger themselves, commentators toned down their rhetoric about such amusement being fit only for bestial minds. The Tiger went on display in London's East India House in 1808 (where it remained until its transfer to the V&A in 1879), and proved an immediate hit. The museum's 1851 guidebook advanced the same thesis as Colonel Wood, but with a cool, light irony: "We may conceive" it sniffed, "how refined must have been the mind which designed such an invention." No telling how refined must have been the British minds that crowded to see it. These delighted so much in hearing the machine's roar that, twenty years later, they wore out the original handle.

As time passed and memories of the Anglo-Mysore Wars grew hazy, Western interpretations of the Tiger might have moved ever farther away from the views of Colonel Wood. Instead they have circled back.

Not that there isn't fine, careful writing about the Tiger. In her 2009 book on tiger-imagery at Tipu's court, for example, art historian Susan Stronge has contributed more than any single person

to what we can objectively say about the device, proving it to be a variant of broader Indo-Iranian artistic and literary styles that identified kingship and heroism with big cats. She observes that most rulers used lions to represent themselves, and suggests that Tipu's idiosyncratic choice of the tiger reflected a commitment to the Shia martyr Ali, who was often compared to tigers in Persian literature. In the midst of this, however, she proposes that the tiger motif expressed the sultan's "constant preoccupation with jihad."

But perhaps we are the ones preoccupied with it. The importance of Islam to Tipu's reign continues to be debated, often viciously, in South Asian academia and popular culture. Certain Hindu fundamentalists and conservatives portray him as a Muslim bigot who does not deserve the reputation for anti-colonial nationalism he has been given in an influential strain of nationalist history-writing. Without a doubt, Tipu oppressed some native Christian and Hindu communities, which he suspected of collaborating with his British enemies. But 'jihad' is a poor, and politically dangerous, way to characterize his policies. He fought Muslim



Tipu's soldiers struck terror in the British, both in India and at home.

[Wikimedia Commons](#)



rulers like the Nizam of Hyderabad, and sought alliances with non-Muslim states such as France. He may have been ruthless, but he was hardly the archetypal Islamist war-monger of neo-con nightmares.

Asking what kind of fanatical man created this machine, many observers forget to ask about the violent men who made it a museum piece. But others fail to see violence in the automaton at all, and find only a big toy made for Tipu's entertainment. In an essay for a 1990 exhibition guide on the treasures of Tipu's court, art historian Mildred Archer managed to call the Tiger a toy three times in two paragraphs, saying twice that Tipu must have loved playing with it. Literary figures have endorsed the toy-thesis as well. Marianne Moore anticipated Archer in her poem "Tippoo's Tiger." After several stanzas listing all the things Tipu owned printed with tiger stripes or capped with tigers' feet, she came at last to the Tiger "a vast toy, a curious automaton."

John Keats, who had seen the sultan's automaton in person while working on his unfinished narrative poem "The Cap and Bells," played the Tiger for laughs. He smuggled a description of it into his poem, calling the machine "a play-thing of the Emperor's choice ... a Man-Tiger-Organ, prettiest of his toys" and comparing its noise to a snore. This jocular reaction is perhaps preferable to seeing the tiger as a kind of mechanical mujahadeen—but if the tiger is a toy, what does that say about Tipu? He must have been, as scholar W.

J. G. Ord-Hume puts it, a man with a "warped and almost childlike mentality." Who else could have such a "pronounced and bizarre ... preoccupation" with childish things?

Nor are the two interpretations really so far apart. Creative minds have always found ways to combine them. In his 1837 poem "Le joujou du Sultan" (The Sultan's bauble) French writer Auguste Barbier managed to depict Tipu's Tiger both as the amusement of an infantile tyrant and as a herald of jihad:

As day's divine glimmer lit up the sky;  
One of his servants cranked the machine  
And the master, awoken, passed his eyes  
Over the hellish plaything; its horrid noise  
Relit his fury and raised up his hate  
Against the conquerors of India.

Barbier's portrait of Tipu is reflected even on the website of the Tiger's current home, the Victoria and Albert Museum. In an extensive webpage devoted to its star attraction, the V&A claims that "the toy tiger" bears witness to "Tipu's much publicized tiger-mania and anglophobia" (Tipu of course was 'anglophobic' in the sense that a man watching his house burn is afraid of fire). Rather than see Tipu as a rational sovereign trying, like his European counterparts, to remain in power and resist his enemies, the Museum treats Tipu as a fervent Muslim with serious psychological problems, evidence for which, it claims, can be found in his dream journal.

Tipu did indeed record a number of his dreams in a Persian-language diary, translated into English in 1957. But this record hardly reveals, as the V&A claims, "his preoccupation with tigers, and his association of the cult animal with the extermination, or at least the driving out, of infidels." Tipu dreamed of tigers, but also of bears, cows, elephants, beryl, mangoes, dates, almonds, and plaintains—a treasury of things animal, vegetable, and mineral. He fantasized about defeating the British, but also about making peace with the Nizam and allying with French. His dream-self went on pilgrimage to Mecca and crushed the unbelievers, but also rebuilt a Hindu temple. As in waking life, the dreaming Tipu was a complex man too large for our clichés.



While Tipu was seen as a war-mongering fanatic, British violence in Mysore was portrayed as a laughing matter.  
Wikimedia Commons





Refrigeration's ability to transform bodies (and lifestyles) has made it an abiding symbol of modernity.  
*Life Magazine*, November 19, 1965

# Flesh Made Wood: The Invention of Artificial Refrigeration

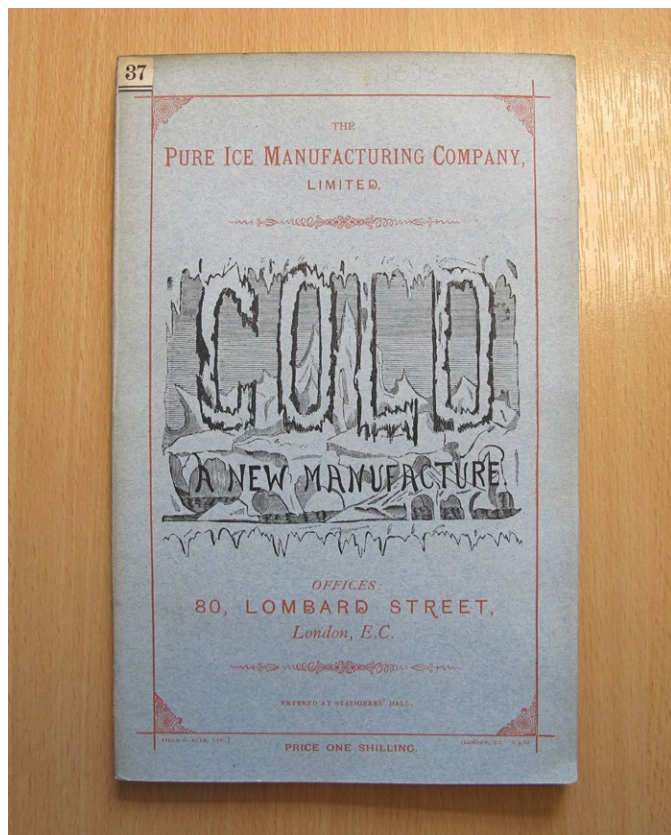
by Rebecca J.H. Woods

The refrigerator is among the most familiar of household appliances. It may also be a distinctively American machine: it has long figured in the domestic sphere as a symbol of prosperity. More recently, it has become a source of ecological guilt at a moment of increasing climate anxiety.

Above all, refrigerators are a ubiquitous and unremarkable fact of contemporary life, not only in North America but throughout the developed world. For the first generation to observe the power of mechanical refrigeration, however, the new technology was anything but mundane. The potential of artificial refrigeration inspired grandiose visions of all kinds, and the power of the

technology—its ability to arrest decay, to produce a change of state even if only in a humble leg of lamb or slab of butter—seemed to place human-kind in a new relationship of mastery over the natural world itself.

Preserving foodstuffs by mechanical refrigeration became an industrial possibility only in the 1870s and 1880s. The key innovation was a particular kind of heat pump that, when attached to an insulated chamber, could maintain its temperature at or below freezing for very long periods of time. Prior to this, a vast and lucrative trade in natural ice had fueled the preservative industry. The scale of this trade was enormous. In the 1860s, the pro-

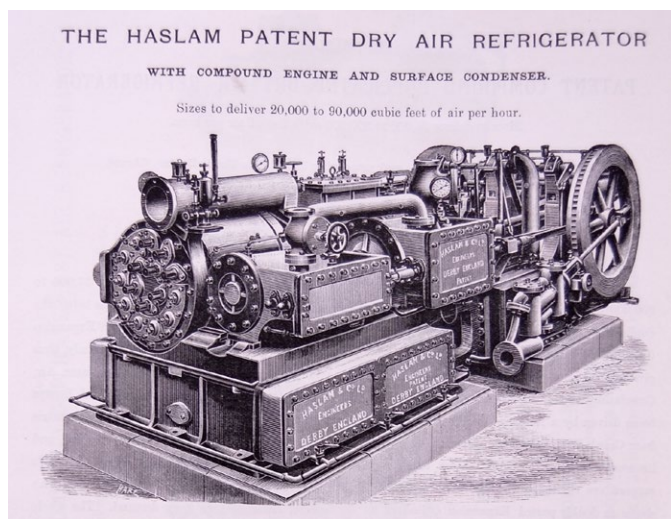


*Cold: A New Manufacture*, a pamphlet produced in 1878 by the Pure Ice Manufacturing Company, Ltd.  
The author

cess of “storing the winter,” as historian William Cronon has described it, linked the lakes of Wisconsin and Massachusetts to places as distant as colonial India, and butchered meat departing the great stockyards of Chicago rode the rails in “ice box[es] on wheels.”

But although the use of natural ice for refrigeration produced many of the same effects as mechanical refrigeration, it remained reliant on the cycle of the seasons, and was therefore susceptible to the whim and will of Mother Nature. For interested parties—pastoralists, ranchers, agriculturalists, industrialists—it was not so much the unreliability of winter that hampered their plans, but the un-pliability of the natural world. Ice moved to the cyclical rhythm of the seasons, ebbing and flowing with the passage of winter into spring, while nineteenth-century entrepreneurs sought a way to preserve perishable substances that would instead be susceptible to the constant rhythm of capital: a steady beat set to the metronome of stock exchanges, markets, supply and demand.

A coal-powered engine that circulated ether, ammonia, or even plain water, alternately expanding and contracting it, and thereby inducing repeated changes of state from liquid to gas and back again was independent of anything other than its energy input. It relied only on a regular supply of fuel and human ingenuity—two things that Victorians believed they had in abundance. Copper piping and cork or paper insulation allowed these machines to lower the temperature of a confined space such as a storehouse or ship’s hold, and to and maintain it at or below freezing almost indefinitely.



A Haslam Patent Dry Air Refrigerator, from the *Illustrated Catalogue of Ice Making and Refrigerating Machinery* (1893).  
Derbyshire Public Records Office

The development of this technology was a transnational phenomenon. Engineers in Scotland, America, Australia, Europe, and of course in Mother Britain, all patented their innovations over the course of the nineteenth century. Between 1855 and 1876, for example, 128 patents for mechanical refrigeration were taken out in Great Britain alone. One of the



first successful oceanic shipments of frozen meat sailed from Buenos Aires to France in 1877.

But for British colonists in Australia and New Zealand, this new technology was particularly exciting. Long known for their vast populations of sheep, by the 1850s and 1860s both Australia and New Zealand appeared to be suffering from an incredible oversupply of sheep and lambs. These animals produced abundant wool for export, but their carcasses presented a logistical problem. The journey to Great Britain was much too long to send live sheep without them losing weight (thereby cutting into the profits to be had), even though Britons at mid-century faced shortages of animal protein amounting to what they considered a “meat famine.”

Colonial populations, on the other hand, were nowhere near the size required to absorb the surplus meat produced by the region’s wool economy: sheep outnumbered people twenty-five to one in Australia, and twenty-seven to one in New Zealand in the 1870s and 1880s. Refrigeration, with its ability to forestall decay and to maintain bodies “in a state of what one may call suspended animation,” offered a seemingly perfect solution to this transhemispheric problem of supply and demand. By the 1890s a thriving trade in frozen meat from the antipodes to metropolitan Britain had emerged. “Climate, seasons, plenty, scarcity, [and] distance...all [shook] hands” in this new trade, as an early Australian pioneer in the trade, Thomas Mort, had predicted in 1875, and out of this temporal and geographical reconfiguration came “enough for all.”

This great handshake had profound implications for global supply chains. Feedlots, the use of growth hormones in the cattle industry, and the carbon footprint of industrial animal agriculture are among the large-scale consequences of this historical transition. But the change of state that mechanical refrigeration induced at the scale of fleshly bodies themselves was no less astonishing for contemporary observers. Before frozen peas and TV dinners were commonplace, journalists who first encountered the frozen bounty of the antipodes could hardly refrain from striking it, simply to hear its frozen ring. A journalist visiting the recently-arrived Australian ship *S.S. Orient* in

Gravesend on the Thames in 1881 reported its cargo “was firm as a rock, and gave out a sharp sound when struck,” while a colonial counterpart reported of New Zealand’s inaugural cargo of frozen mutton that the carcasses were “as hard as boards, and emit, when tapped with a stick, the sound of an empty barrel.”

Artificial refrigeration, it seemed, effected technological transubstantiation—a change of state to match that which powered the engines themselves. In reducing things to “such a state of frigidity,” flesh was made wood or rock—sometimes even metal. A technological wonder, indeed.

Of course, Victorian Britons weren’t completely naive when it came to the effects of extreme cold on flesh, live or dead. The development of artificial refrigeration followed close on the heels of the Little Ice Age. In winter, the Thames froze regularly, and Britons from Manchester to London could expect to be substantially dusted by snow, if not engulfed in it. People knew what frozen looked and felt and sounded like, if not necessarily from direct experience, then at the very least in literary form. Reports and travel narratives from Canada, Russia and the Arctic exposed a voracious reading public to the experience of seriously low temperatures.

Yet the novelty of producing that state through mechanical means allowed for juxtaposing the very



An 1874 advertisement for the Zero Refrigerator.  
Internet Archive





BLOCKS OF PURE ICE AND CARAFES FRAPPÉES.

The 1878 pamphlet *Cold: A New Manufacture* featured a number of staged photographs of ice blocks luxuriating in stylish settings. The author

hot and very cold in hitherto unimagined ways. Passengers on ships equipped with refrigerated chambers could now enjoy cold butter while steaming through the tropics, and for a “comparatively small outlay after the first cost” of investing in a refrigerating engine, “one might be transported into ‘thrilling regions of thick-ribbed ice’ even in the midst of summer,” as one booster for the new technology enthused. Artificial refrigeration effected not only technological transubstantiation, it was also capable of putting the extremes of summer and winter cheek by jowl.

Refrigeration promised to free humanity from the confines of the natural world—to establish a mastery over nature that was part and parcel of imperial Britain’s larger self-identity on the world stage. Where the example of the Arctic had once provided a natural metaphor for the processes of mechanical refrigeration, by 1882 the metaphor had been inverted. There, in the coldest parts of the world, Nature performed “the work of a refrigerating machine.” Such was the power of artificial refrigeration to produce “ice-house[s] of the chemist’s fashioning, completely under man’s control,” that flesh was made wood, and nature came to resemble artifice.

### New Refrigerator Has Built-In Radio Receiver



New refrigerator with built-in radio in the top. Chromium knobs match hardware on refrigerator. With radio in kitchen, housewife may listen to her favorite program while working.

A REFRIGERATOR equipped with a built-in radio has been placed on the market. So popular was the first model that the manufacturer has made available a choice of several models in different sizes equipped with radio. This has been accomplished by having the radio mounted in the top of the refrigerator, and having the refrigerator constructed so that a top equipped with radio may be substituted for one without.

It has been said that the housewife spends sixty per cent of her time in the kitchen. Now by having a radio installed in the refrigerator, she may listen to her favorite program while working.

Because most radios are placed in the living room, one or two rooms from the kitchen, usually the housewife, when she is in the kitchen, finds it necessary either to miss a program or turn the volume up to a point where it is objectionable to the rest of the family. With this popular combination the housewife may work and listen at the same time.

The twentieth century brought another wave of technological advances to refrigeration, like this report from the August, 1937 issue of *Modern Mechanix* that anticipated the “internet of things.” <http://blog.modernmechanix.com>





Ditsong Museum, courtesy of J. Adams

# Ditsong's Dioramas: Putting a Body on a Fossil and a Fossil in a Narrative

by Lydia Pyne

His eyes were vacant—glassy, even. Blood flowed from his head and his hands dragged next to him, fingers rolling lifelessly in the brown African dirt. His mouth was frozen open in terror, his head firmly clenched between a leopard's jaws. The cat's snarl was practically audible. The scene was strangely mesmerizing and people stopped in their tracks to gawk. The horror, the horror. Another hominin bites the dust in the Ditsong Museum dioramas.

To most visitors, I would venture to guess, the Museum is a modern day cabinet of curiosities, chock-full of dinosaur fossils and taxidermied exotics. The most striking displays feature reconstructions of fossil human ancestors—the australopithecine hominins. Originally founded as the Staatsmuseum (State Museum) of the Zuid-Afrikaansche Republiek on 1 December 1892, the museum has amassed a colossal collection of artifacts and specimens from South Africa over the past 122 years.

In the early twentieth-century, the Staatsmuseum was renamed the Transvaal Museum and, in 2010,

became the Ditsong Museum of Natural History. As a result of these changes, many exhibits at the Ditsong are receiving makeovers; the human evolution dioramas are no exception. The Museum curates some of South Africa's most important fossil collections and many famous fossil human ancestors are brought to life through elaborate scenes based on the South African fossil record.

The first time I visited the then-Transvaal museum, these dioramas showed the wear and tear of decades of display. Visitors saw exhibits with hominin hair a bit askew, tired-looking faux plants collecting dust, and models of australopithecine behavior that hadn't really been in scientific vogue since the late 1960s. But the overall effect was oddly compelling. This past summer, I visited the Ditsong Museum again as part of a research trip to museums in Johannesburg and Pretoria. Despite their somewhat scrappy appearance, I was really looking forward to the Ditsong's exhibit of australopithecine dioramas. On arrival I learned that the dioramas were closed to the public for cleaning, changing, and re-interpreting the evolutionary scenes.

What could the Ditsong dioramas have to offer?

Dioramas have a powerful explanatory power as tangible reconstructions. They take a static object, like a fossil, and give it a face and body. They transform the grimace of an ancient skull into an anthropomorphized face that looks back at us. We as viewers walk away understanding more through the diorama than if we simply read a descriptive placard about the fossil. Famous South

A hominin refers to any species (fossil or living) that includes the genus *Homo* and other members of the human clade. In other words, a hominin includes modern humans and their ancestors. Australopithecines belong to the genus *Australopithecus*—a genus found in southern and east Africa whose species date to the Plio-Pleistocene of 4-2 million years ago.



An early human ancestor in a contemplative moment, framed in one of the Ditsong Museum's distinctive dioramas.

Ditsong Museum, courtesy of J. Adams



African fossils like Mrs. Ples and the Taung Child find character, persona, and a voice through their public displays in the museum, in a South African museum even more so than other natural history venues.



In 1925, Australian anatomist, Raymond Dart, announced an unusual fossil from the northern province of South Africa. The fossil—a small crania and mandible—came from Buxton Limeworks quarry and arrived for Dart's inspection buried in a crate of rocks. Dart and his wife, Dora, nicknamed the fossil the Taung Child and good-naturedly anthropomorphized it. "There was doubt if there was any parent prouder of his offspring," Dart later recalled, "than I was of my Taungs baby [sic] on that Christmas of 1924."

Upon its official publication in *Nature*, the scientific community dismissed the Taung fossil as a candidate for a human ancestor. Theories about the mechanics of human evolution in the 1920s pinned their hopes on the Piltdown fossil, found in Sussex in 1912 and later revealed as a hoax. According to evolutionary theory upheld by supporters of the Piltdown fossil, humans evolved big brains earlier than bipedality. The Taung Child, on the other hand, suggested that bipedality might be an earlier evolutionary trait than a large brain. Historical distance helps us to unpack the reasons that Piltdown was such a fossil contender in the hominin family tree—Piltdown privileged the Eurocentric historical vision of the day (It was only after Piltdown was shown to be a hoax in 1952 that the Taung Child became accepted as a human ancestor). Ultimately, the Taung fossil shifted the geographic emphasis of human evolution from Southeast Asia and Europe toward Africa, putting australopithecines on the map in scientific and

In the space somewhere between folklore and history, the story of the Taung Child's discovery is practically apocryphal. The fossil's discoverer, Dr. Raymond Dart, tells of rummaging through that crate of fossils, discovering the pieces, and then taking time to ruminate upon Darwin's theory of man's African origin. Dart's daydreams were interrupted by his friend, tugging at this sleeve. His friend, a rather frantic, soon-to-be groom, begged Dart to put down the fossils and preform his duties as the best man as the bridal car was quickly approaching. Dart, himself, loved telling that story.



Raymond Dart with the Taung Child, immediately after his publication of the fossil in *Nature*, 1925.

University of Witwatersrand, Raymond Dart Archive

public imaginations. Few fossils since have been simultaneously so scientifically important and publically iconic.

By 1925, Dart had created casts of the fossils which he promptly dispatched to Wembley, England as a contribution from South Africa toward the British Exhibition in 1925. The Exhibition Commission was most excited to show the casts, praising the exhibit Dart created: "We have had a good deal of attention drawn to this exhibit by the newspaper reports and we are indeed grateful to you for having framed such a nice cast." The exhibit caused a stir within scientific circles because Dart argued the Taung fossil was a human ancestor and not some ape-like evolutionary offshoot—a decidedly anti-Piltdown argument. Prominent members of the paleo-intelligentsia, like Sir Arthur Keith, complained of being forced to parade through the public exhibit to examine the specimen rather than attend a special viewing for their own study. Prior to the exhibit, newspapers in England, South Africa, and as far away as Tasmania, played up the scientific rivalries and the question of the evolutionary legitimacy of the fossil, creating a huge public interest in actually seeing the crania

cast at the British Exhibition. Dart recognized that the Taung Child had a public presence and spent a good deal of thought working out how to best display the fossil's cast.

At the cost of a mere £15, cast replicas could be ordered by other institutions. The American Museum of Natural History queried Dart for one in the early 1930s. With a great deal of diplomatic tap-dancing, a set of casts even reached the Moscow Museum in 1933. Dart corresponded with other paleoanthropologists (like Franz Weidenreich, working in China), offering to trade a copy of the Taung Child's cast. And Dart was inundated with numerous requests from Australia to Botswana for copies of Taung fossil for the museum to display to its visitors and to be accessible to its researchers—a human ancestor that so many had heard so much about.

Thanks to the newspapers' interest in the fossil, the Taung Child thus gained a public as well as scientific life. People, even outside of scientific circles, had heard of the Taung Child. The cast became a way for scientists and museum-goers to put a face to the news reports of the Taung Child, itself. The

cast was an equalizing object: expert and amateur fossil enthusiasts viewed the fossil casts together in spaces that did not differentiate according to education and expertise.

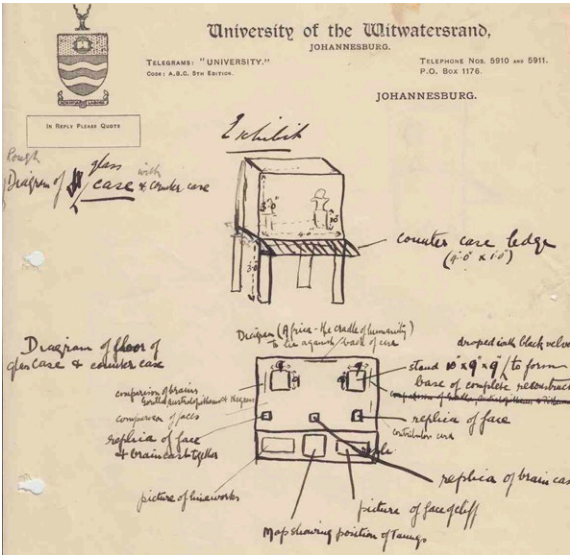


Dioramas and museum reconstructions, however, take us a step further than a simple cast. Reconstructions of extinct species—the australopithecines, in the case of Taung—became a way to put a body on a fossil. Fossil reconstructions evoke the tactility of muscle, skin, hair, and movement, providing a sense of “real-ness” that a mere description, however detailed, simply cannot match. Famous animals like Sir Roger the Elephant, in the Glasgow Museums collection, and Balto the Dog make the stories of these animals' lives accessible, long after the animal is dead.

Putting a body on a fossil also puts a story on the science behind it. And setting this reconstruction of an extinct species in a larger diorama takes this one step further. The dioramas tell the viewer more than a plate or a placard repeating information from the scientific literature—it gives the viewer a narrative.



For example, “letters to the editor” of the *Johannesburg Star* were littered with people inquiring about the evolutionary status of the fossil after the fossil's initial publication in 1925.



Raymond Dart's sketch of the Taung cast display for Wembley and the British Exhibition, 1925. The author, courtesy of the University of Witwatersrand, Raymond Dart Archive

Balto the Dog at the Cleveland Museum of Natural History. Luke Scarano via Wikimedia Commons



No one is exactly sure when Ditsong dioramas were first constructed, but most guesses put the dioramas as part of overhaul of the museum's taxidermy and exhibits in the late 1960s. So what narratives surround the Ditsong dioramas? What stories are written into the fossil reconstructions and what are we to make of them?

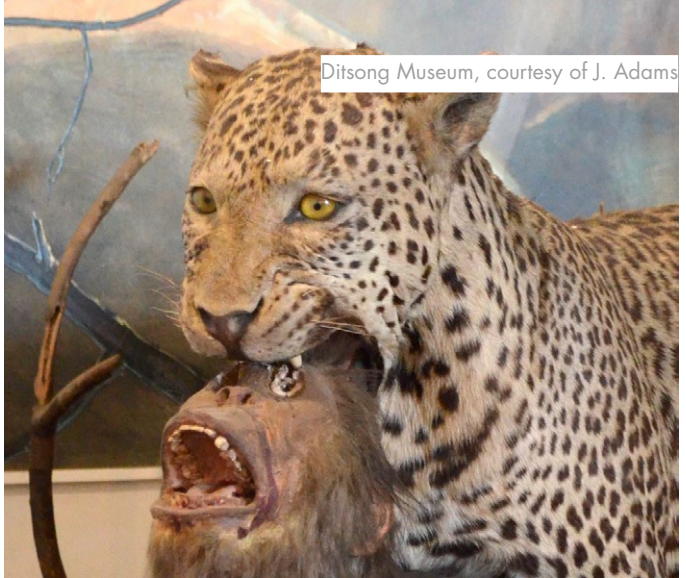
In one corner, we see the stuffed leopard dragging an adult australopithecine off to its lair with the skull lodged firmly in its mouth. Blood drips from the tooth-punctures in the skull. (As a grad student, I used a photo of this very diorama scene as the background for my office name tag until my officemate made me take it down, claiming that it creeped her out and was off-putting to students.) In another corner, a different leopard sprawled on a tree branch, chewed on a juvenile australopith, where body limbs accumulated below the tree (suggesting perhaps that this was not the first small hominin to fall foul to predators).

A different section of the room showcases what appears to be a nuclear family: two parents playing with children, while keeping a watchful eye on the birds of prey perched above them. A small, furry moppet, labeled "Taung Child" toddles after his other family members.

Other scenes highlighted early tool-use, as adults brandished clubs. And a small in-wall diorama showed a stretching australopithecine, greeting the morning as others begin to awaken against a sun-kissed African horizon. It took a lot of restraint not to draw the Black Monolith from 2001: A Space Odyssey into that diorama's background.



Raymond Dart termed this "*osteodontokeratic culture*" and most research post-1960s has completely dispelled the legitimacy of this type of tool-use and this interpretation of fossil remains.



Ditsong Museum, courtesy of J. Adams



**The Taung Child**  
The "Taung Child" (*Australopithecus africanus*) looks apprehensively at the eagle. It is thought that an eagle killed the Taung child, and other small primates, about 2 million years ago.



What narratives do these dioramas tell? And why are they important?

On the surface, it's easy to dismiss such scenes. We can say that our scientific understanding of tool-making, social dynamics, and paleoenvironments has changed so much that we ought to dismiss these dioramas as vestiges of fifty-year-old science (for example, there is no paleo-evidence to support a depiction of the Taung Child in a nuclear family). It's easy to argue that these dioramas are doing a disservice to museum-goers since the visitors will take away "wrong" information. It's easy to take issue with the presentation of the reconstructions, saying that because the diorama stories are imprecise, it would be better to strip the scenes from the museum and only display fossil casts and their descriptions.

These stories, however, humanize the australopithecines, and that's a powerful thing. It makes the fossil record accessible to us as people, not just as scientists. It makes us more sympathetic, more

empathetic, with fossils we're seeing. Just as we're ready to look to the brandishing club as a clear cultural motif, courtesy of Stanley Kubrick, we're prepared to allow human ancestors narratives that we wouldn't have in other circumstances. Putting the body on these fossils speaks to the way that we consciously or unconsciously make sense of these scenes and human evolution more generally.

Ditsong Museum's dioramas stand in stark contrast to the Smithsonian Institution's Hall of Human Ancestors in Washington, D.C. While Ditsong has several entire scenes, there are only a few full-body reconstructions of human ancestors in the Smithsonian (most notably, of the famous Ethiopian fossil, Lucy). The reconstructed bodies and subsequent narratives of these ancestors have been stripped bare, back to the fossils' casts. Instead of full diorama scenes, visitors see amazingly life-like reconstructions of hominin faces, created by brilliant paleo-artist John Gurche specifically for the Smithsonian. (Gurche's hominin faces make just about every other attempt to put a



Display of Taung Child cast in the Smithsonian Hall of Ancestors.  
The author

body on a human ancestor look like a bedraggled 2001 extra sporting costume mange.) Interestingly and tellingly, for purposes of our diorama discussion, Gurche's reconstructions are hominins that stand alone. There is an element of singularity and disconnect as the reconstructions stand as individuals, devoid of a scene and devoid of a story.

Interestingly, many of the specimens in the Hall of Human Ancestors have been reduced to their cast presence – there isn't any attempt at a reconstruction. The Taung Child, for example, our famous South Africa fossil and lovable toddler from the Ditsong, cast stares unblinkingly at its viewer, devoid of any narrative. The small fossil is marooned without connections or context. This is a stark contrast to the Ditsong's dioramas. Even in the original display of the fossil casts at Wembley, Raymond Dart dressed up the display with a black velvet backdrop, impressing upon the viewers that idea that they were seeing something valuable, like a venerated gem. In the Hall, there is none of that. In the Smithsonian display of the Taung Child, we can practically see Marcel Duchamp's modernist series of glass—the Taung Child in the Hall of Human Ancestors shows us *The Fossil Stripped Bare from its Narrative, Even*.



Reconstructions of the fossil species are the means through which we internalize and make sense of the bare bone. And the face, the body, and eventually, a scene, allow us to be able to make sense of what we're seeing through narratives that are familiar, stories that we can put ourselves into.

The dioramas at the Ditsong are still undergoing their cleaning and refurbishing and their future is in limbo. Perhaps the new displays will incorporate the most recent science of the fossils? Their diets? Their social structures? Their interactions with other animals in their ecosystems? It all makes me wonder what new narratives would be consciously or unconsciously written into the dioramas. A display without a narrative seems stark, cold, and inaccessible. I, for one, hope that the dioramas, in some narrative form or other, will continue to build powerful links between fossil and viewer.

The author would like to acknowledge Drexel University's Pennoni Honors College; Dr. Justin Adams; Dr. Kevin Egan; Dr. Bernard Zipfel; Tesia Perregil of the Ditsong Archives; the Institute for Historical Studies at the University of Texas at Austin; and the feedback and editorial expertise from *The Appendix*.



E. VIEW OF THE PUBLIC SQUARE OR GREEN, IN NEW HAVEN CON.

# On Looking: Friendship and the New Haven Green

by Claire Schwartz

But you are here  
for the story...  
So it is a lost story  
but we will be imagining it, anyway.  
—Rita Dove, “Prologue of the Rambling Sort”

Many things are true at once.  
—Elizabeth Alexander, “Amistad”

It’s summer, this evening. And it’s perfect. We’ve been waiting for weeks to call it that. This is our time to shed the Beinecke Library’s hunched and treasured promise. We nervously joke about whether the cameras over our shoulders are really watching us—even as we know their presence is about protecting the 500,000 volumes and millions of manuscripts housed here. We’ve

put in our day’s hours, combing through Richard Wright’s papers and Langston Hughes’s meticulously catalogued correspondence, grateful for the intimate distance of handwriting curated across time. Once outside, we are grateful anew for the stretching of limbs and the city’s trafficked chatter.

This is the kind of twilight I want to put my skin against: seamless. I’m thankful for a friend I can set my whole self down in, and there you are, walking just a little bit ahead of me, down Chapel Street—past the coveted Lithuanian coffee cake at Claire’s Corner Copia, past the boutique stores that don’t seem to sell anything in particular, so much as to mark this street (at least those parts that shine behind glass) as the purveyor of excess—what Amanda Erickson must be referring to when she proclaims in *The Washington Post* that New Haven has “outgrown its reputation as a college town that’s more crime than coffee shop.”

**Header Image:** Barber, J. W. *E[ast] view of the public square, or Green, in New Haven Con[n]ecticut*. Published and sold by J.W. Barber and by the booksellers in New Haven. 1831 & 1846



In her gloss on this city's history of the past sixty years—speaking back to an identity accruing since the wake of WWII, when manufacturing jobs plummeted and urban violence climbed—Erickson flippantly muses: “[O]n a recent weekend trip, I discovered that this New Haven doesn’t really exist any more (if it ever did).” If it ever did.

The constellation of burgeoning galleries and coffee shops that have ridden the aesthetic coat-tails of industrial renewal seem to induce not only blindness, but also amnesia—corralling the city’s present and multiple histories into an asset that is literally available for consumption: “divey ethnic food options.” For Erickson, these diverse eateries exist to bolster the city’s emergent “quaint”-ness and “historic charm.” This is our geography, even as we lament Yale’s encroachment on the rest of the city.

“Can you really know anything about the subjects of Wright’s interviews from his papers?” You wonder aloud, reflecting on the day’s research. We’re walking side-by-side now, and your voice gathers me from the city’s diffuse soundscape, drawing me into focus. You’re frustrated that Wright’s reflections on the 1955 Bandung Conference, which brought together the leaders of twenty-nine African and Asian nations, are a shadow screen on the South Asian subjects you want to engage. His archive testifies to their presence, even as his aggressive overwrites hold at bay a subjectivity that is not Wright’s, filing the contours of their personae against the cookie-cutter imposition of Orientalism. “Since I had resolved to go to Bandung, the problem of getting to know the Asian personality had been with me day and night,” Wright laments. “Knowing that I had no factual background to grapple with the swirling currents of the Asian maelstrom, I had weeks before devised a stratagem to enable me to grasp at least the basic Asian attitudes.” You spend the day coaxing dimension from Wright’s writing, reading the vectors of his desire like a map. Maybe the spaces between drafts will reveal the shapes of his erasures, you hope, opening up the carefully kept boxes of papers and trying to find a way to read otherwise.

This city is restless. *The Dead Shall Be Raised*, proffers the Egyptian revival arch that presides over the Grove Street Cemetery. America’s first char-



Entrance to the Grove Street Cemetery.  
Claire Schwartz

tered burial ground and the first cemetery to organize its burials by family, the Grove Street Cemetery was founded in 1796 when the previous burial site, the New Haven Green, became overcrowded after the preceding years’ yellow fever epidemics. The tombstones were transferred to Grove Street, but the bodies remain interred in their original place. Two years ago, Hurricane Sandy exhumed a skeleton from under an oak tree planted in 1909 in honor of Abraham Lincoln. New Haven seems to want to unbury itself.

We cross the street, heading left onto the Green. So often, the sixteen-acre park seems a place of two speeds: a granter of shortcuts for those who have elsewhere to be and a dwelling place for those who have nowhere to go. But now, transformed, it is the city’s pulsing heart. The International Festival of Arts and Ideas promises us fifteen days of “performing arts, lectures, and conversations that celebrates the greatest artists and thinkers from around the world,” and some of its best events are held right here.

*L’Homme Cirque*. The one-man circus. The tickets are either full price (\$35) or pay-as-you-wish. Between us, we pay \$3 and feel generous when the teenager in the ice cream truck ticket booth tells us he has received donations starting at twenty-five cents. He motions behind him, to the tent

New Haven seems to  
want to unbury itself.

set up on the Green. When we enter, it smells like elephants.

This evening, there is only one vested man. L'Homme Cirque. He is trainer and trick. His instruments: treadmill; tightrope; wooden horse. His exaggerated gestures forgo language. He seems at once impossible and inevitable, as though he might at any moment burst into a backflip.

We take our seats. There is a cannon off to the side. A small boy in a kippah covers his ears with his whole and flat hands. The fits and starts that jolt his small body are not correlated to anything visible to me. He knows these spaces are prone to eruption. There is a slim girl, who fidgets with the edges of her veil and smiles widely when a friend on either side leans in to whisper in her ear. There are teenagers on a date—grateful to have something they understand as harmless to cast their laughter on. And their fear, mock with a copper thread of truth. She buries her head in his shoulder because she wants to bury her head in his shoulder, but the man balanced on the tightrope is a delicate and beautiful excuse.

There is a chorus of kids who are young enough to fall noisily for the illusion. “Ewwwww.” Their voices come loud and high from every direction when a brown wooden ball drops from the fake horse. The kids who are just a little bit older—the ones who totter unstably on illusion’s edge—are

afraid not that the poop is real, but that they alone are the ones that see through. Or, worse, that everyone else shares this knowledge but assumes that they don’t. “That’s not real! They know that’s fake, right?” They say, tugging on the sleeve of the nearest adult.

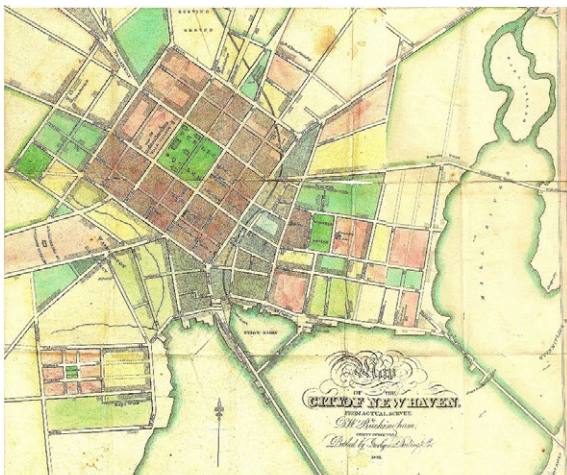
A small child whimpers when L’Homme Cirque tries to engage her, offering an amplified and quizzical glance. The child’s mother offers the performer a consoling look before taking her daughter outside. (I wonder, suddenly, whether he’s lonely; whether he feels this as a loss, the children being taken to an outside where protection trumps entertainment. Does the creation of this magical space lock him into his own boundaries?) The tent is small enough that I feel seen watching, responsible to the man for the way I’m looking at him. I’m glad for the sureness of you next to me. “It’s magic,” we say to each other, over and over again, knitting the night into a memory we know we will want to hold.



In 1839, people from the Mende ethnic group were abducted from their homes in today’s Sierra Leone and transported across the Atlantic to Havana, Cuba. One of the women who had been captured found a metal file on the ship. The woman’s name has not been kept. The ship was named the *Tecora*. The *Tecora* docked in Havana—nearly five thousand miles from her home—where the woman-whose-name-has-not-been-kept disembarked, keeping the file close and hidden, even when she and fifty-two of the people who had been illegally captured and brought across the Atlantic were purchased by Don Jose Ruiz and Don Pedro Montez. Ruiz and Montez put the Mende captives on yet another ship.

Shuttles in the rocking loom of history,  
the dark ships move, the dark ships move  
their bright, ironical names  
like jests of kindness on a murderer’s mouth...

*La Amistad*. Friendship. The name of the two-masted schooner destined for Havana, the second vessel of the Mende captives’ illegal transport. The woman brought the file, which she gave to Sengbe Pieh, one of her fellow captives. Sengbe



*Map of the City of New Haven, from actual survey, Connecticut, D.W. Buckingham, 1830.*  
Sterling Map Collection, Yale University

used that file to cut himself free and then to cut the chains from the bodies of his fellow slaves. They killed the ship's captain, half of the crew, and Celestino, the mulatto cook. He had threatened the Mende captives that they would be eaten. They spared the navigator and commanded him to sail east, back to Africa.

The navigator directed the ship north and west. The ship was adrift for two months before the US Navy apprehended the vessel off the coast of Long Island. Were the captives free men who had the right to defend their freedom? The case was the nexus of numerous debates. The "symbolic fight to reconfigure the nation's understanding of democracy" unified a fracturing abolitionist movement. Taking center stage in domestic disputes between abolitionists and advocates of the 'peculiar institution,' the case also implicated international debates about the global routes of slavery. President Martin Van Buren, galvanized by an impending election, sought to bolster his popularity in the Southern states and brought the case before the US Supreme Court in 1841. John Quincy Adams came out of retirement to represent the Mende captives on board the *Amistad*. The *United States v. The Amistad*.

And the *Amistad* captives waited, kept in a jail on the New Haven Green. For twelve-and-a-half cents, residents of the city could come look at them.

William Townsend was eighteen years old. He came to look and made pen-and-ink drawings of the *Amistad* captives while they were awaiting trial. In 1934, a relative of Townsend's donated twenty-two of these drawings to the Beinecke Library. Eighty years later, I am running my finger across the sketched face of a little girl and wondering what the reliefs of her imagination looked like. What did she make of this white boy-on-the-hinge-of-manhood, come to draw her? What did he want of her picture? Did she see in his image anything of herself—anything of her mind in this head that floats on the paper like a matte phantom?



Frontispiece from J.W. Barber's *A History of the Amistad Captives: Being a Circumstantial Account of the Capture of the Spanish Schooner Amistad, by the Africans on Board*.

Beinecke Rare Book and Manuscript Library, Yale University



William Townsend, Marqu. ca. 1839-1840. Pencil drawing, 16.5x13.8 cm.

Townsend, William H. *Sketches of the Amistad Captives (Marqu)*. ca. 1839-1840.

Beinecke Rare Book and Manuscript Library, Yale University



We see first and deepest who we might closest be, if not ourselves—your eyes on the round brown face of a wide-eyed child whose mother's thin fingers show him the way: look at that! His path to L'Homme Cirque is laced with her elegant gesture. The frightened little boy's kippah commands my gaze. We have learned to look. For pride? Protection? How do we understand ourselves in these closenesses?

When I graduated college and found myself in South Africa and lost between work and the room I'd rented, my mother said: find a door with a me-zuzah, and knock—like that marked prayer makes my closest neighbor. It is the same year that Leiby Kletzky, an eight-year-old Hasidic boy found his murderer in Boro Park, Brooklyn. July 11, 2011; Leiby's first day walking alone from camp to a point where his mother had agreed to meet him. They had practiced the walk together the day before but, by himself, he has lost his way. He stops to ask direction from Levi Aron. A kippah on both heads, their shared marker toward God. Surely this man knows the way; he will point the boy safely toward home.

But it is only tonight, and we are here. We've just sat down in this magical tent on this magical evening, and I am looking first at this beautiful boy in the kippah whose sister calms him with a hand on his shoulder, and I am whispering, *achot*, sister, so quietly it fills and never leaves the home of my mouth, this word that fits my tongue.

Jose Ruiz changed Sengbe's name to Cinque, the Spanish name meant to suggest that he had been born into slavery in Cuba, where slavery would not be abolished until 1866. If only Ruiz could rub away the Mende name, make him Cinque—born black in Cuba—he and Montez would have been within their legal rights to take him.

What can we find of this man in these kept files? We write back to Montez and Ruiz: Sengbe. No, Cinque is not his name. He was not born into your language. But Sengbe, too, is only an approximation of the Mende. Did he ever hear this name as his? If Sengbe refuses to fold to Ruiz's scheme, it also marks the limits of my tongue's empathy.

I will be called bad motherfucker.  
I will be venerated.  
I will be misremembered.  
I will be Seng-Pieh, Cinqueze, Joseph,  
and end up CINQUE.

In the 1830s, every freshman entering Yale College knew Latin. They anchored their tongues in a transatlantic claim to civilization. They watched the return of Halley's comet through a 5-inch Dollond, the most powerful telescope in America. They saw furthest. They made sense.

*A is for abolitionism*, the first entry in the *Dictionary of Afro-American Slavery*.

"Throughout British North America, formal opposition to slavery was rare outside of the Society of Friends (*see* Quakers)." See, Quaker abolition movements believed that black people should neither be slaves nor fellow citizens. What of the "formal opposition" of enslaved people? *F is not for file*, the kept-close and way-making tool Sengbe used to render useless his chains. Elizabeth Alexander writes:

The historian laments caesuras in the historical record; the artist can offer deeply informed imagining that, while not empirically verifiable, offers one of the only routes we may have to imagine a past whose records have not been kept precious.

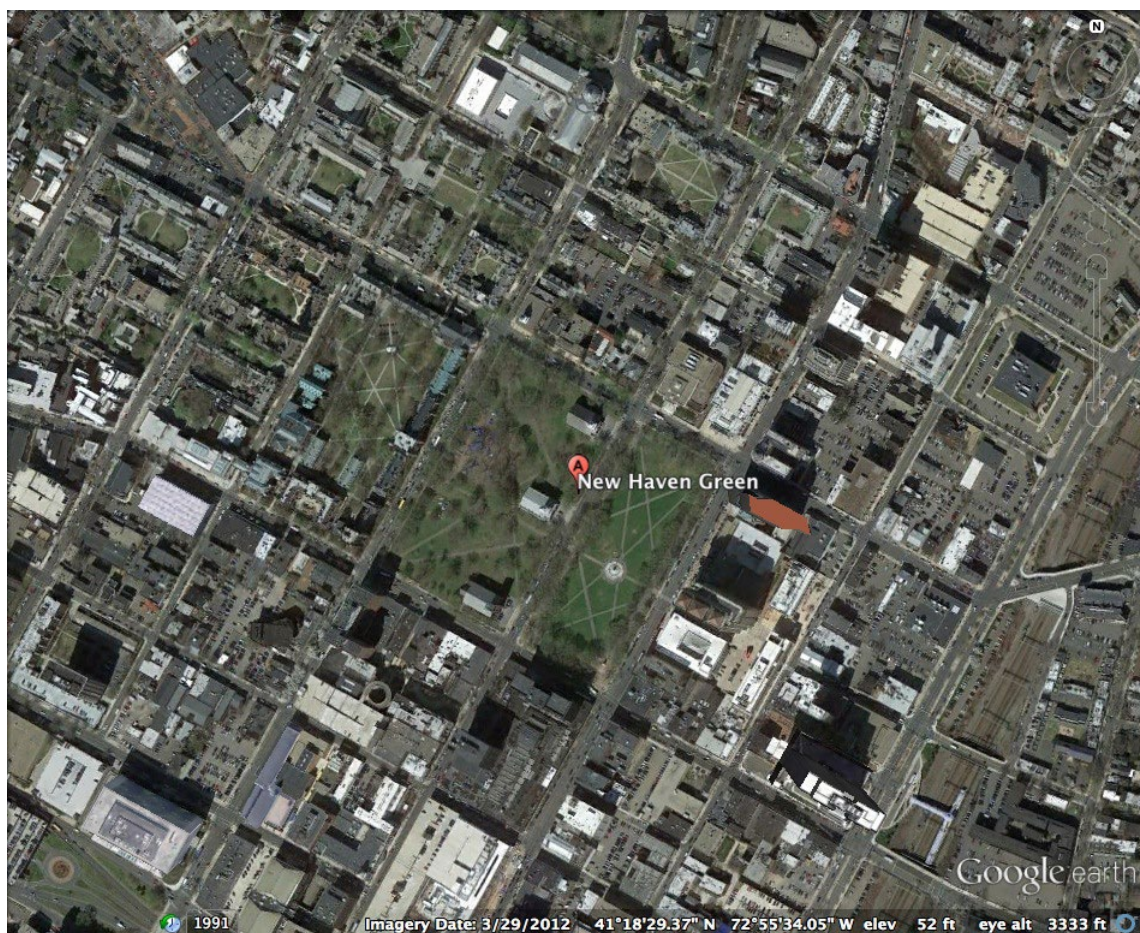
What opposition? Whose form?

The deep immortal human wish,  
the timeless will:

Cinquez its deathless primaveral image,  
life that transfigures many lives.

Voyage through death  
to life upon these shores.

With comic grace and clipped exactitude L'Homme Cirque runs a match up the side of the cannon and tucks himself into its narrow shaft. He is ejected and lands with impossible precision on a high wire. A trickle of blood down his scalp blunts our



The Green continues to serve as a central node around which the city grows and develops.

"New Haven Green." 41°18'29.37" N and 72°55'34.05" W. Google Earth, March 29, 2012. February 12, 2014

applause—not knowing, at first, whether this is part of the stunt and what our clapping, if offered, would affirm. The air is hazy and thick with the dangerous magic of our not-knowing. We are the child saying “They know that’s fake, right?” and fearing the consequences when there is no one to oversee the boundaries of our uncertainty. But it is softer, somehow, the edges of danger dulled by collective confusion.

L’Homme Cirque climbs through a flap in the top of the tent, and we gather outside to watch him, placing one foot slowly in front of the other, into the red and dusk of sky; we are woven together by our uneasily shared spot of looking—though I wonder how often I have stood on the Green with these or other people before and not thought of

our jagged intimacy. From where we stand: the bloody scalp invisible, its health restored by our distance. He is only the miracle pressed into the blanket of twilight. The sky is purple and orange and he is walking up into it. Slowly, he turns around and takes a photo of us watching and waving and wishing him well.



# El Ñáñigo: A Spirit Dancer of Afro-Cuba

by Linda Rodriguez

Victor Patricio de Landaluze's costumed dancer, known as El Ñáñigo, stands silent and still. The viewer almost expects a sudden breeze to ruffle the branches that hang in his right hand or the raffia that circles his ankles, wrists, waist, and neck.

The rigid pose belies how the ñáñigo, also known as an íreme (spirit dancer), vigorously moves during the ceremonies of the Abakuá society, an all-male system of lodges established in 1836 in Cuba, inspired by the "leopard societies" of the Cross River region of Old Calabar. Forty-five years later, the Spanish artist Victor Patricio de Landaluze represented the ñáñigo as part of his volume that cataloged social "types" particular to Cuba. Landaluze's illustration captures a performative pause.

In ceremonies (and more recently on a public, folkloric stage), the íreme represents ancestors or mythological characters through the use of different suits and objects. The figure performs a visual language of gestures in sharp, angular, staccato movements. The movements at times embody the utterances of the *ekué* drum. In this way, the ñáñigo acts as a guardian of ritual and as a "spiritual messenger," according to the art historian David H. Brown.

Landaluze's íreme, however, does none of that. Brown astutely notes that Landaluze's realism "disciplined the bodies and gestures of the íreme through classical figuration and the views he offered to beholders." He compares the dynamic counterpoint of the íreme's performed gestures to the balanced stasis the viewer encounters in Landaluze's rendition—more akin to the classical statuary of a Greek Zeus than what might be observed when the íreme dances.

Visit <http://appendic.es/m/1i> for video of an íreme performing the sharp, angular, staccato movements.



Landaluze's depiction of El Ñáñigo.

Victor Patricio de Landaluze *Tipos y costumbres de la isla de Cuba* (1881)

The lithograph of the ñáñigo appeared as part of Landaluze's *Tipos y Costumbres de la Isla de Cuba* (Types and Customs of the Island of Cuba) from 1881. The volume details in costumbrist fashion, via text and image, the various social "types" to be found on the island. Landaluze also illustrates the figures of the cockfighter, the cigar maker, the country peasants, the "mulata of the street," and the lottery ticket vendor, among others. Costumbrist works in Europe and Latin America, through their construction of social types, contributed to the formation of a national identity, according to May-Yen Moriuchi. However, foreign artists who completed costumbrist works often exoticized their subjects.

Importantly, though, Landaluze's placement of the ñáñigo in an unidentifiable location separates him from the social body. The other types in the volume appear with others or in their usual surroundings, like the country peasants in front of their thatched roof home amidst the palm trees of the Cuban countryside.



Landaluze isolates the figure of the ñañigo, in turn, to emphasize the control of a highly criminalized body. In the late nineteenth century, the Spanish colonial government persecuted Abakuá members as the end of the slave trade loomed near. Abakuá's association with murder and fear continued into the twentieth century. Abakuá was a plague on society, and Abakuá members "the bogeyman of Cuban history," in Ivor Miller's words.

The art historian Evelyn Ramos also points out that Landaluze, in his late work after the 1870s, increased his representation of Cubans of African descent. She characterizes these images as constructions of a kind of "black savagery" specifically linked to the multi-racial insurgent movement taking shape in eastern Cuba. In this sense, "Landaluze's images suggest that the communion of white and black soldiers on the field was leading down a path of social miscegenation and disorder."

When Landaluze does depict the ñañigo in the midst of the social body, he places the figure in "appropriate" spaces. In a carnival scene from the late nineteenth century, the ñañigo, in black and white costume, gestures in close proximity to two mulata women.

In the (white) elite configuration of colonial space, the street was the domain of free men and women of color and the enslaved. The Countess of Merlin (María de las Mercedes Santa Cruz y Montalvo), a white woman born in Havana who left to live in Spain, writes in her 1844 travelogue that white women ventured into public very little. "Only black women," she observes, "walk everywhere with their shoulders and chests uncovered, with a cigarette in their mouths, leaving trails of smoke." In another street scene, the ñañigo spreads his arms before a trio of women in a window. A black servant, probably a slave, stands behind a white woman and her child as they watch, all safely out of reach in their home.



Preparations for a cockfight as depicted by another "costumbrist" artist, Leonce Angrand, in 1854.  
Bibliothèque Nationale de France



"Los guajiros," *Tipos y costumbres de la isla de Cuba*, Victor Patricio de Landaluze, 1881.



Víctor Patricio de Landaluze, *Tipos y costumbres de la isla de Cuba*, (1881)



Víctor Patricio de Landaluze, *El diablito*, (1880)

Yet, Landaluze's isolation of the ñāñigo in the *Tipos* image—an emphatic separation from society—foregrounds his attention to detail in the spectacular rendering of the suit and mask. Paradoxically, Landaluze's abstraction of the figure urges us to examine these details. Our eye moves through the rhythm of the strong diagonal, vertical, and horizontal lines of the suit's checkered and striped pattern. We stop at the ñāñigo's ankles, wrists, and waist where raffia and bells sprout forth. From a dark hole, the dancer looks in the direction of the stick pointed in his left hand. The fronds and rooster's feathers, hanging from his waist, augment the actual size of the figure along with the point of his mask—further embellished by the shadow on the wall.

Landaluze's attention to detail has led some scholars and historians to read the image for its value as an ethnographic document. Indeed, Ivor Miller, in his work with contemporary titleholders of Calabar Ékpè (leopard) societies, suggests that the suit's patterns represent the spots of a leopard associated with a particular grade in the society. He also cites the vertical nature of the mask as an important symbol of the "enlightened state" of the grade. However, applying the reading of contemporary titleholders in Africa to the image overlooks the possibility of new meanings assigned to the pattern of the suit in colonial Cuba. David Brown, in contrast, offers that the suit may have been modeled after a masquerade known as *Embema*, a royal figure associated with the forest.

The static and isolated figure invites contemplation of the suit's pattern and possible meanings. Can we also read his stance as coded gesture for Abakuá members in 1881? We wonder, but the moment of stillness suggests imminent movement. Our observation escapes us—we wait for the íreme to move and break his stance. We wait for the bells to sound.





# Elegy and Effigy

by Mari N. Crabtree

An effigy dangled outside the second-story window of Vardaman Hall, a men's dormitory on the University of Mississippi campus. Its head crooked from the rope tied around its neck, the limp figure wore a sign that read "GO BACK TO AFRICA WHERE YOU BELONG." Tucked inside the back of the collar was a Confederate flag. The effigy's crudely painted eyes stared out at Baxter Hall, the residence hall of James Meredith, the man the effigy was meant to represent.

The effigy was the third to appear on campus in as many weeks. The first appeared back on September 13, 1962, even before Meredith had enrolled in his state's public university as its first African American student. His classmates strung up the second effigy on October 2, one day before the third effigy was hanged. The sign draped around this second figure informed Meredith, "We're gonna miss you when you're gone," and in the middle of the night, a crowd of students gathered outside Vardaman Hall to set the effigy aflame and

shoot off firecrackers to intimidate Meredith with the sound of the explosions.

The similarities between the effigies of James Meredith and the thousands of black bodies hanged and burned by southern lynch mobs over the years were intentional. Just as their parents and grandparents had used ritualized violence against black bodies to celebrate white supremacy, the University of Mississippi students who displayed and burned these effigies performed a ritual desecration of Meredith's body. The bodies left hanging around campus may have been filled with cotton, not the flesh and blood of African Americans, but these effigies proudly invoked a tradition of lynch-

**Header image:** James Meredith (center) received hundreds of death threats when he integrated the University of Mississippi in the fall of 1962. His fellow students greeted him with taunts and jeers, but also with effigies they hanged and burned to register their disgust with his presence on campus. He spent the rest of his time at the university flanked by U.S. marshals charged with ensuring his safe passage around campus.

[Wikimedia Commons](#)



ing that reaffirmed the same culture of white supremacy that lynching had celebrated for over one hundred years.

To say that these effigies were merely representations of violence would ignore the reality that these were far from empty threats. Meredith's "welcome" to the campus began with a violent riot put down by thousands of U.S. marshals that left two people dead and hundreds of marshals and rioters injured. For the remainder of the academic year, armed marshals accompanied Meredith almost everywhere he went to protect him from physical violence, though they could do little about the verbal barbs and epithets hurled his way almost daily. In the weeks and months that followed, Meredith received hundreds of death threats. A letter from Troy, Alabama signed "The Sovereign States of Alabama and Georgia" made a sorry attempt at poetry, practically shouting through the page in all uppercase letters:

ROSES ARE RED  
VIOLETS ARE BLUE  
I KILLED ONE NEGRO  
I MAY MAKE IT TWO

The subsequent stanzas threatened to castrate then hang Meredith and his "friends" if they ever set foot in Alabama or Georgia—his friends presumably being Martin Luther King, Jr., Medgar Evers, and Robert Kennedy. A letter signed simply "Buddy" predicted that someone would "pinch [his] head off" and make his wife a "black widow." Others entertained fantasies about his death by lynching, like one postcard that read:

Dear Nigger bastard, I hope they hang your black ass from the biggest tree around. You fucking aborigini [sic] prick. You eight ball cocksucker. You prick cannibal. Your [sic] a mother-fucker you black fuck. Love, The Whites

These letters, and dozens if not hundreds of others like them, not only threatened Meredith's life but did so by pointedly deploying the rhetoric of lynching. That letter from Alabama made a direct allusion to one common feature of lynching, the mutilation and castration of male victims. Descriptions of Meredith's body hanging from a tree evoked the spectacle of lynching: the carni-

valesque atmosphere of the ritual, the souvenir photographs sold afterwards, the display of the body for passersby to gawk at. These letters also spewed racial epithets that, like lynchings themselves, unequivocally illustrated that these warnings were directed not only at Meredith but at the African American community more generally.

Most of these threats arrived as letters and telegrams, but his fellow students hurled more than taunts and jeers at him—they also threw rocks, bottles, cherry bombs, and firecrackers. One day Meredith even found a dead raccoon on the hood of his car. Within a matter of weeks, the dead bodies had piled up, though, thanks in part to the marshals, Meredith's was not among them. The list included three effigies, the remains of Paul Leslie Guihard and Ray Gunter who were killed in the riot, the dead raccoon, and the figurative corpse of Meredith imagined in a growing stack of death threats sitting on his dorm room desk. A couple weeks prior to Meredith's enrollment, a white undertaker from Corinth, Mississippi named Bill McPeters even sent a telegram offering to take the corpses of Meredith and any other "troublemakers" off Governor Ross Barnett's hands and to bury them free of charge. What might have seemed like rhetorical chest-thumping had some substance to it. In his telegram, McPeters boasted about "own[ing] the ground that the tree still stands on that was used about 55 years ago: when one got out of place." The lynching the undertaker referenced had occurred well before he was even born, but he used the force and power of that lynching to lend credibility to his offer. Meredith was spared bodily harm and McPeters's services weren't necessary, but the students who repeatedly hanged these effigies intended these representations of lynching to have the same practical effect as lynching itself. They hoped to intimidate Meredith into dropping out of the university so that their "southern way of life" (i.e. white supremacy) could continue unchallenged.

Meredith remained remarkably unflappable despite the daily onslaught of verbal and physical threats. When a reporter asked what he would like to say to his classmates, he answered, "I've noticed that a number of students looked like they're mad. I don't know what they're mad at, but if they're mad at me, I'd like to know about

Americans, especially white southerners, have a tendency to ignore or silence the more disturbing elements of the South's fraught racial history. In light of these tendencies, I bring to my writing a commitment to unearth what are often painful, ugly stories and to narrate them in ways that affirm the humanity of lynching victims, their families, and their communities. I see the recovery of these stories and images as an elegy of sorts for the victims and survivors of lynching, an elegy that so often has been confined to hushed conversations among family and friends or trapped in the subconscious memories of survivors.

Writing thoughtfully about extreme violence and responsibly using images depicting that extreme violence matters, especially because I so emphatically want to avoid reinscribing the very objectification of black bodies that I hope to combat through my work. Lynch mobs actively tried to transform people into objects (and object lessons) by pairing the public spectacle of these extralegal killings with the extended torture and grisly mutilation of black bodies. Likewise, lynching postcards that showed smiling white faces posing with dead bodies were reminiscent of the photographs that hunters took with their trophies after a

successful kill. Effigies quite literally objectified the people they represented by dispensing with once-living bodies, which, in part, is why this subject presents particular challenges for humanizing the experiences of those targeted by the effigies.

I have linked to only one image of an effigy in the online version of this article. I could have included several more, but I imagined my readers scrolling through slide after disturbing slide of symbolic death, losing track of which stuffed figure represented which flesh-and-blood person. I worried that, after the first few images, readers might reach their capacity for processing this onslaught of violence. They might gaze at each subsequent image in a way that unwittingly would risk anonymizing and objectifying the people depicted by those effigies, which would be an insult to their memory. To forego images altogether would seem to replicate the erasure of lynching from public consciousness, so I chose one image: a photograph taken on October 3, 1962, of James Meredith in effigy. Although the question of how to represent lynching is always up for debate, I hope I have, for the time being, settled on a respectful and ethically defensible position that best serves the elegy I am writing.

what." He gave measured responses to reporters' questions about the violence and vitriol, the isolation and insults, but after his 71-year-old father was awoken in the dead of night by shotgun blasts fired into his house, he wondered how much harassment he could stand to put his family through. In an article he wrote for the April 19, 1963, issue of *Look*, he lamented that "hearts have now shown that they don't intend to change," but he also vowed to continue his fight for racial justice, despite his trepidations about threats to his family. Meredith made only passing reference to the threats directed at him, which he derided as undignified and shameful. What must have been an unnerving barrage of verbal and physical attacks to endure, he largely brushed off as more evidence of his home state's well-deserved reputation for racial vitriol.

The number of lynchings declined significantly

by the time the United States entered World War II, but effigies like the ones left hanging on the grounds of the University of Mississippi cropped up all across the South in the decades that followed. Even before the war, back in 1939, the Ku Klux Klan hanged a black effigy from a telephone pole in Miami, Florida to intimidate African Americans who had registered to vote. The bloodstain that spread from the effigy's heart and ran down its torso onto its legs was partly covered by a sign

I see the recovery  
of these stories and  
images as an elegy of  
sorts for the victims and  
survivors of lynching

announcing, “THIS NIGGER VOTED.” Three decades later, in 1965, dead black crows with nooses around their necks hanged from the limbs of the grand oak trees lining the road just outside Tchula, Mississippi. African Americans driving to the county seat knew those crows swinging from the tree limbs were meant for them to see, even without a sign telling them what would happen if they registered to vote.

These effigies and numerous others explode the comforting (not to mention ahistorical) myth that the moral fiber of humanity inevitably improves with the march of time. As recently as February 16, 2014, three white fraternity brothers at the University of Mississippi allegedly vandalized the statue

of James Meredith that stands between the university’s library and the Lyceum, where the 1962 riot had been concentrated. Early that morning, a contractor noticed the vandalized statue with an older version of the Georgia state flag—one that prominently featured the Confederate battle flag—draped over its shoulders and a noose tightened around its neck. The full monument depicts Meredith walking through a door labeled “courage,” “knowledge,” “opportunity,” and “perseverance,” and though the perseverance referenced on the door celebrates Meredith’s unflagging persistence in his fight for racial justice in Mississippi, the perseverance of a white supremacist element on that campus exposes the bitter irony of the monument.



Dedicated on October 1, 2006, this monument on the University of Mississippi campus commemorates the integration of the university with a statue of James Meredith walking through the doorway of courage, knowledge, opportunity, and perseverance. Just a few hundred yards away is an enormous monument to Confederate soldiers. December 7, 2011.

Mari N. Crabtree

This is not to say that the racial status quo is forever stagnated or that these racist images are impossible to dislodge. Depending on the findings of the ongoing criminal investigation, these students may be charged with a hate crime, and the investigation itself is evidence of a significant shift in social tolerance for lynching since 1962, much less since 1891 or 1908 or 1935 when actual lynchings occurred in Oxford, Mississippi but went unpunished. But what makes the repetition of the symbolic lynching of James Meredith so troubling comes to the fore when we remember that you don’t need a flesh-and-blood body dangling from the end of a noose to realize that these representations, and the racist sentiments behind these representations, carry with them a standing threat to the African American students and residents living in Oxford, Mississippi.

I have struggled to figure out how to write an elegy for a living person and how to write an elegy for a practice that persists today. An elegy implies a kind of finality or closure, but the issue of racial violence seems far from resolved in places like Oxford, Mississippi. Nevertheless, the impulse to remember and the imperative to humanize these effigies remain at the core of my work. I remain cautiously hopeful though—after all one needs at least a sliver of hope when writing about lynching and effigies. I hope that recovering how and why white southerners have deployed the rhetoric and imagery of lynching will prevent fresh bodies from appearing so we can properly eulogize the ones that have come before.



# NOT-SO-FUNNY PAGES

## Machu Picchu, Revisited

by Kevin Cannon and Christopher Heaney

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This one's unique. The last two issues of *The Appendix*, 'Off the Map,' and 'Digs,' featured two wonderful and witty cartographic biographies of explorers: Dane Peter Freuchen and half-Inuit Knud Rasmussen, and Gertrude Bell, respectively. Kevin Cannon, a co-founder of the Minneapolis-based cartooning studio Big Time Attic, illustrated both. When we asked him about what explorer he wanted to cover for this issue, 'Bodies,' he was very clear: Hiram Bingham, the American historian who made Machu Picchu famous in 1911, and then proceeded to excavate its graves, causing a rather nasty subsequent custody battle between Yale University and Peru.

If you know your *Appendix*, you'll know this is a subject near and dear to our heart. One of Kevin's key sources in drafting his new map, in fact, was a history of Bingham's expeditions by *Appendix* co-founder Christopher Heaney, *Cradle of Gold*. Their conversation over email about the politics of representation of an illustration like this was interesting enough that we thought it might accompany the map's publication in this issue. For Chris, it was a way to revisit some of the hard choices he made while writing *Cradle of Gold*. For Kevin, it was a chance to further describe his process in creating for *The Appendix*. This map is his best yet, we believe, and its back story—while not as compelling as the story of Machu Picchu itself—is nonetheless worth revisiting.









## CHRIS

So, Kevin, I want to begin by saying how cool I think your new map is, and how much I love the ‘bio-cartographies’ you’ve done for *The Appendix*. (Have we settled on a name for this new artistic genre you’ve invented?) I especially like how you were able to fit two historical frames on the same map: the story of the conquest of the last city of the Incas, Vilcabamba, and the execution of Tupac Amaru; and the story of how Hiram Bingham reached what he thought was the last city of the Incas, Machu Picchu. There are all sorts of details here I hope we might tease out for *Appendix* readers in this conversation.

But I want to begin by pulling back the curtain. One of the key sources you used for this map was a book I wrote named *Cradle of Gold*, a history of Vilcabamba, Hiram Bingham’s discovery of Machu Picchu—with an asterisk, as you so delightfully visualized it—and the subsequent fight over the site’s artifacts between Peru and Yale University, Bingham’s employer. It’s an absolute honor that you were so inspired—but, for reasons I hope we can get into, it’s also a very interesting experience for me. Given all the choices that I know I needed to make in condensing what I gleaned from archives to tell Bingham’s story as a historical narrative, I’m wondering about the choices you decided to make, culling from what you had read.

So maybe let’s start this with a question of process, for you, before we get into the nitty-gritty of what you included, and how that helps me think about what I included, and what those small inclusions mean for how our work is read. How do you go about making these ‘carto-biographies’ (there’s another candidate), and how did you choose, in this specific case on Bingham and Machu Picchu, what you wanted to focus on?

## KEVIN

Thanks, Chris. Part of the fun for me in creating these maps is picking a region of the world I know nothing about, and then picking a hyper-specific aspect of that region and learning as much as I can about it. I’ve found that for me to really learn anything—and have it stick—it helps to start learning a region through a particular explorer or an exciting adventure. Seeing Syria through Gertrude Bell’s eyes in the last map, for instance, taught me

more about Druze culture and the pre-WWI Turkish/Syrian conflict than if I’d just read a Wikipedia article. Likewise, I couldn’t tell you much (or anything, really) about Peru and Inca culture until I saw them through Hiram Bingham’s adventures. These are biased lenses to see other parts of the world through, no doubt, but they give me a foundation to build on.

For the Peru map specifically, I was really struck by your narrative structure in *Cradle of Gold* and how you used the image of a *kipu* to weave together different timelines in Peru’s history. As a reader I was immersed in the fall of the Inca Empire and the adventures of Hiram Bingham simultaneously, and I was determined to have the illustrated map reflect this combining of timelines.

The hardest part about starting a map like this is narrowing down the scope of the story. In all three maps my eyes have been seriously larger than my stomach, so to speak. The Peter Freuchen map was initially intended to be a visual history of his whole life, but that had to be pared down to one simple trek across Greenland. Similarly, the Bell map illustrates only one short leg on her journey across Syria, and this Bingham map shows just a sliver of his 1911 trek. I make these cuts due to the obvious spatial limitations, but also because I think the fun of these maps come from the small anecdotes on a trip. Going back to the macro issue, if these carto-biographies only showed the big headlines, like “Bingham discovers Machu Picchu” and left out details like Pablito Richarte showing Bingham the ruins, I think the maps would lose a lot of character.

But with a whole book to work with, you can seemingly add every detail you run across, I imagine. How difficult is it for you to craft your story when you don’t have rigid spatial limitations? I.e. to find that balance between explaining everything but also keeping the reader’s attention?

## CHRIS

‘Carto-biographies,’ it is!

It’s harder than you might think, because there are spatial limitations, for better or worse. My publisher contracted *Cradle of Gold* for 100,000 words, footnotes included. I think it came in as



about 115,000? Because once you get into it, and you commit to the conceit of, well, a four-hundred-year history with about six of those years told in incredible detail, it's very easy to get lost in the weeds, which hide all sorts of interesting people and things lost long ago. Case in point, the letter that *The Appendix* printed last issue from the topographer on Bingham's third expedition to Machu Picchu, in which he complains, hilariously, of his privileged tentmate. It was the funniest thing I have ever found in the archives, but it simply didn't fit the tone of the book, and it would have required me to go into depth on these new actors.

I'm reminded of something the author George Saunders wrote in his terrific introduction to an edition of *The Adventures of Huckleberry Finn*, to the effect that there's the narrative, which is the conveyor belt that moves the story along for the reader, and that there's the 'stuff the author loves,' which the author wants to just keep shoveling onto that conveyor belt as fast as possible but can't because the belt will get jammed. Writing a long textual narrative is a combination of figuring out at what speed the belt moves, and then how much of what you, the author, loves that the belt can take. Because there's a point at which you just have to say, 'I love that, but it doesn't flow.' Does that ring true to you?

But before you answer—I think the bigger issue for me is the framing. I felt I had to publish *Cradle of Gold* in a timely manner: it spoke to an unfolding conflict between Yale and Peru over Machu Picchu's artifacts, and my research spoke directly to the debate. I could not have gotten *Cradle* published that way, though, if Bingham wasn't the central "Indiana Jones" style figure. I love histories of Machu Picchu in which Bingham is more a tourist than explorer—there are great ones in Spanish—but given that the core archives I was using were his, and the files that I found in government archives centered on what the Peruvian and U.S. governments were trying to do with the problems Bingham caused, it was hard not to write it using him as the 'protagonist'—even a 'Lawrence of Arabia' style protagonist, who, in David Lean's 1962 biopic, is sympathetic in the first half, then becomes something far more complicated. Besides, there were key questions regarding Bingham's intentions that hadn't been answered: did

he ever recognize Peru's sovereignty over its Machu Picchu artifacts? (Yes.)

What I still struggle with, though, is all the things that focusing on Bingham still left out. There is much more to write about the interactions between Machu Picchu's farmers and the expedition members. The latter measured the former's skulls—something that will show up in my next project. The issue of race is central in a way that I didn't fully unpack: what does it mean when Bingham distinguishes or lumps together the Incas and the Quechua-speaking people that guided him to the Incas' dead? For example, one thing that jarred me about your map was Bingham's line, in the lower right, "This changes everything we thought about the natives!" 'Natives' is a very charged word, but I didn't ask you to think on changing it, because, well, Bingham was a very privileged white graduate of Yale in the early twentieth century, and that's *exactly* the sort of word he'd used. Changing it would have whitewashed the racism of the era. But I did ask you to consider changing a piece of text related to the University of Cusco. Originally you had it reading "Bingham gave a lecture here when interest in Inca History was heating up!" Which was true, but I worried that there wasn't enough on the map that pointed to how local Peruvian knowledge of ruins and interest in history shaped Bingham's expedition. So I asked you to change it to "Students shared clues here, or "Bingham collected clues here..."

All of which is to say, 'Good lord, how I feel accountable to the dead...' It limits what I do with what I find. Which raises a wonderfully perennial question to me: What is the point of history, and what is the point of fiction? How do you think of these maps? Are they documentary? A dramatization? Or adaptations? You also create graphic novels that are more straight fiction—how do you make the choices you do in longform? Do you feel accountable to characters like Army Shanks? Or do you feel more accountable to crafting a good narrative? Would you ever consider doing a longform 'nonfiction' graphic novel on your own? There's the excellent work you and Zander have done with Jim Ottaviani—any other projects like that coming?

KEVIN

First of all, I read the topographer's letter that you referred to earlier, and if *The Appendix* ever gets into the game of developing sitcoms I hope you'll strongly consider an *Odd Couple* spin-off featuring the topographer and his lazy roommate.

We're in the same boat as far as having to leave out interesting historical details because they don't fit on the conveyor belt, so to speak. I have an added element of restriction, which is an anecdote's physical relation to another anecdote. For example, part of the reason why I added the Dead Man's Gulch bit on the map is that it—being a dig that happened south of Cusco—happened to fall in a blank space in my sketch. So while the dig didn't have a ton to do with the narrative of finding Machu Picchu, I needed to fill that space and it's an interesting anecdote. As a side note, I was expecting you to come back and suggest different wording for when Bingham uses the term "native", but now I understand your reasoning for keeping it in. As much as possible I try to create the map through the explorer's eyes, even if it results in moments that seem racist, or if the map has features that are wrong or out of date (such as using Bingham's antiquated spelling of "Cuzco").

I want these maps to be as historical and factual as possible, but I also want people to realize that they are seen through the lenses of two unreliable narrators. The first narrator is me, a non-historian who will make visual and editorial choices based on both personal interest and artistic limitations or marketing purposes. And as much as possible I try to pull the adventures from the explorer's mouths. The Greenland map, for instance, was taken directly from two different published accounts of the trip, both written by Freuchen himself. I have no doubt that Freuchen is devoted to conveying the truth, but he's also a natural showman with a keen interest in selling books, so anything he writes—and thus anything that then ends up on my map—should be taken with skepticism. The Gertrude Bell map was a little different in that I was able to read both the published account and transcriptions of her journals written while on the trip. But there again a skeptical reader will question whether she, someone traveling through foreign country in 1905, could ever write a truly honest account—or was she always craft-

ing her journals knowing that a third party might read it? So when you ask whether I think my maps are documentary or dramatization or adaptation, I guess my answer is "all of the above."

The difference between the maps and the nonfiction graphic novels I've worked on is that I'm fully aware that the maps don't tell the whole story, so my aim is that they'll be entertaining enough to inspire someone to go to the library or bookstore to get the whole story. Conversely, we aim to tell the whole story—or as much of it as we can—with the graphic novels. Jim Ottaviani is probably the best known and most highly acclaimed nonfiction graphic novel writer working today, and Zander and I are thrilled to have illustrated two of his books, *Bone Sharps*, *Cowboys*, and *Thunder Lizards* (the story of Cope and Marsh, America's first feuding paleontologists) and *T-Minus: The Race to the Moon* (the story of the US/Soviet space race, with a balanced look at both sides). I don't know a ton about Jim's writing habits, but it's my impression that he produces his scripts with an academic eye, using as many sources as he's able to, and writing a narrative that is as objective as he can make it. In *Bone Sharps*, for example, he has to stretch the truth a bit to make it a compelling narrative, but he acknowledges that by disclosing all of these factual errors and omissions in a big "fact vs. fiction" section at the end of the book. Other books that we've done, which touch on subjects like evolution, genetics, and rhetoric, are all heavily vetted. Currently we're both writing and illustrating a graphic novel introduction to philosophy. And when I say "writing" I mean we're crafting a sometimes-humorous narrative around philosophical content provided by a professor of philosophy, so the hard part has basically been done for us.

What's on the horizon for you? You must get inundated with interesting content while working on *The Appendix*—do you ever come across something that screams out to be a longer book? Something on rocket cats, perhaps? Or does writing a published book, with all of its limitations and people looking over your shoulder, look less attractive now that you have a vehicle like *The Appendix*?

## CHRIS

I will get on writing that sitcom posthaste.

We run across great things every day at *The Appendix*, and many of the pieces we the editors write are pulling from long, long-standing interests. (Rocket cats are very much Ben's, for example!) Right now the majority of my writing time is consumed by my dissertation, a long history of grave-opening in Peru. Pieces of it may end up in *The Appendix* as an article or two, but I'm mostly trying to save that for a possible eventual book. The other book I keep tapping at is the *Death of a Sailor* serialization I've shared with the journal. There have been three chapters so far, and it's paused, for the moment, while I wrap other things up. (It may be paused for a year or more, given that the next wave of research I have to do on it might need travel to Portugal, Brazil, and London. Which will be fun, I'm sure, but something else will have to pay for that.)

Speaking of travel, how's this for a last set of questions: where would you most like to travel, why, and with whom? And when, chronology being no limit? And maybe as a preface: you've done so much interesting stuff with Canada's frozen north. Have you been there? If so, what was that like?

## KEVIN

I'd like to visit the polar regions some day, but it's the getting there that interests me more than the place itself. My ideal trip would be as a deckhand on a sailing ship headed north, or maybe as a cartographer helping to chart the Canadian islands on Otto Sverdrup's Fram voyage a hundred years ago. There's something incredibly romantic about sailing north without knowing what was up there. Rumors used to abound about a warm open polar sea or even a hole at the North Pole that led straight to the center of the Earth. On the flipside, scurvy doesn't sound like much fun, so an ideal trip would be AFTER scurvy had been figured out, but BEFORE everything up north had been all mapped out.

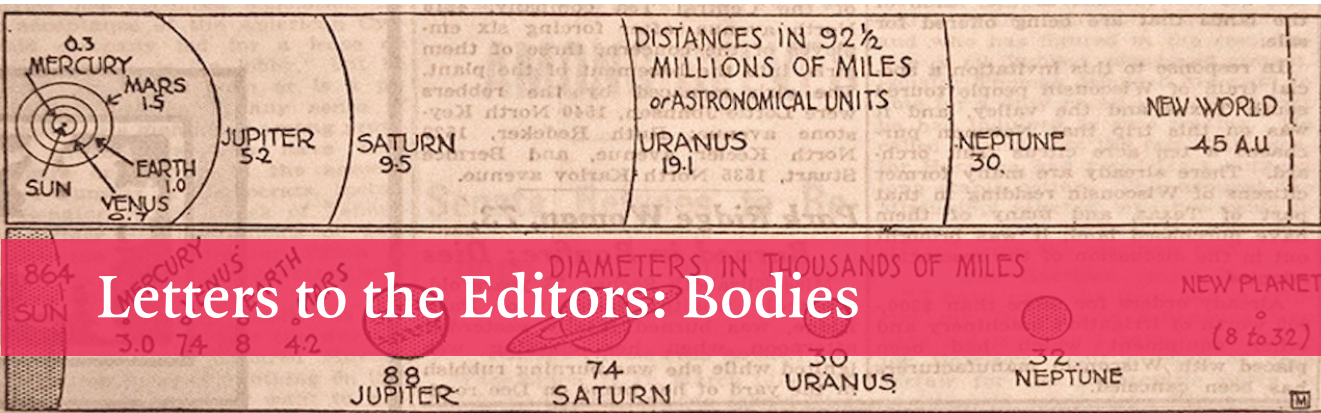
I've never been to the Canadian Arctic before, but during college my friend and I spent a week in Alaska, biking around Anchorage and kayaking in Prince William Sound. We didn't see any icebergs but we definitely got a taste of what it's like to be alone in a vast, cold environment. Part of me longs to go on another adventure like that, but another part of me is happy to do my traveling through books and Google Maps, where I don't risk losing my fingers to frostbite.



CHAPTER THREE:

# FOREIGN BODIES





# Letters to the Editors: Bodies

Welcome again to The Appendix letters page, where we offer correspondence from the past.

For the Bodies issue, we searched for letters about all things corporeal: a 1780s tirade about frugality that maligns “French Cooks, Italian musicians, foplin taylors, dancers, tirewomen and all the mangos which retain to luxurious pleasure,” for instance. Or an early account of nitrous oxide which seems to protest too much about the absence of “errotic [sic] symptoms” when the gas was administered.

But our favorite are a batch of letters that weren’t necessarily to an editor, but rather an arbiter: Neil deGrasse Tyson to be exact, the director of the Hayden Planetarium, which aroused the ire of astronomically-inclined schoolchildren throughout the United States when it demoted Pluto from a planet to a more ambiguous form of cosmic body, a “planetoid” or “dwarf planet.” The kids were, to put it mildly, not all right.

As always, we hope these letters inspire you to write letters of your own—to The Appendix and to parties deserving and otherwise.

—The Editors



**Header image:** Announcement of the discovery of Pluto (then believed to be “bigger than Jupiter”) in the March 14, 1930 issue of the *Chicago Tribune*.

## “A Seasonable Recommendation of Frugality. In a Letter to the Editor.”

The London Magazine, November, 1781.

SIR,

We are told that frugality is a most churlish and unbeneficial thing to society. For consider, say they, in what the prosperity of a state consists. In nothing so much as a quick circulation of property. By this, the citizens of any body politic are always kept busy and alive; but a very great part of the present circulation is derived from such indulgences, as frugality would certainly exclude. If the mere demands of nature were only to be listened to, without any allowance for gay appetite and fancy, what would become of those thousand employments, and of that infinite quantity of circulating property, which depend upon diet, dress, ornamental furniture, and elegant amusement?

... those despicable ministers are always humble worshippers of the Demon who supports them; and never fail to spend in her service the votive offerings which her favourites bring to her shrine. French cooks, Italian musicians, foplin taylors, dancers, tirewomen, and all the mangos which retain to luxurious pleasure, are constantly known to dissipate their large revenues, as fast as they get them ... thus propagating through the whole nation, as far as their influence extends, puny bodies and effeminate minds, for the strength, glory and happiness of the body politic.



“On the Use of Nitrous Oxide”

British Journal of Dental Science and Prosthetics, November 14, 1872.

SIR– During the last three years I have not met with a single instance in which erotic [sic] symptoms have occurred, the number and variety of habits of the patient having been too numerous to attribute this to mere chance.

Undoubtedly nitrous oxide requires more skill in its administration than chloroform, in order that complete anaesthesia may be produced and retained in its integrity; this is only to be acquired by constant practice, which leads me to believe that the sensual emotions described in the extract would not have occurred had the use of the anaesthetic been sufficiently pushed at the proper time.

... It is rather a curious fact that the lowest known temperature that can be produced takes place on the mixture of two anaesthetics, namely—bisulphide of carbine and liquid nitrous oxide; at this temperature, which is 220 below zero Fahr., alcohol becomes so viscid that the vessel containing it may be inverted without any of the alcohol falling to the ground.

Faithfully yours,

P. WOODHOUSE BRAINE



A satire on laughing gas from 1830 London.  
Wikimedia Commons

“The Taungs Skull”

The Friend, South Africa, September 14, 1925.

Sir,—To settle a dispute, will you please tell me in your correspondence column whether the Taungs skull, discovered by Professor Dart, has since been found to be merely an ordinary ape skull, or whether it is still considered to be that of an early type of man?

[Signed]  
MODDER RIVER OBSERVER.

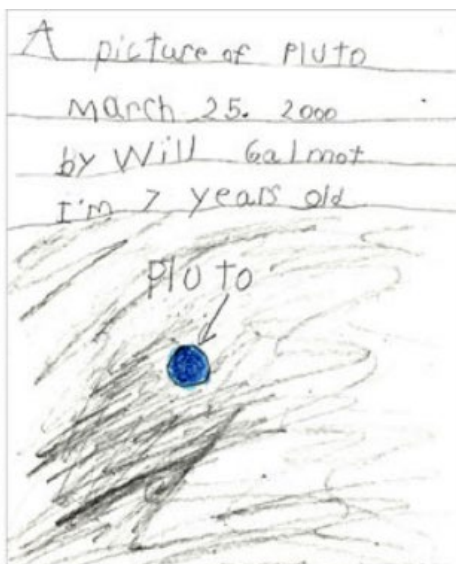
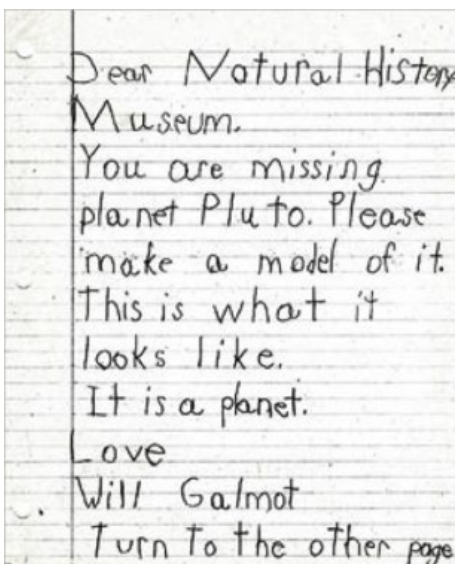
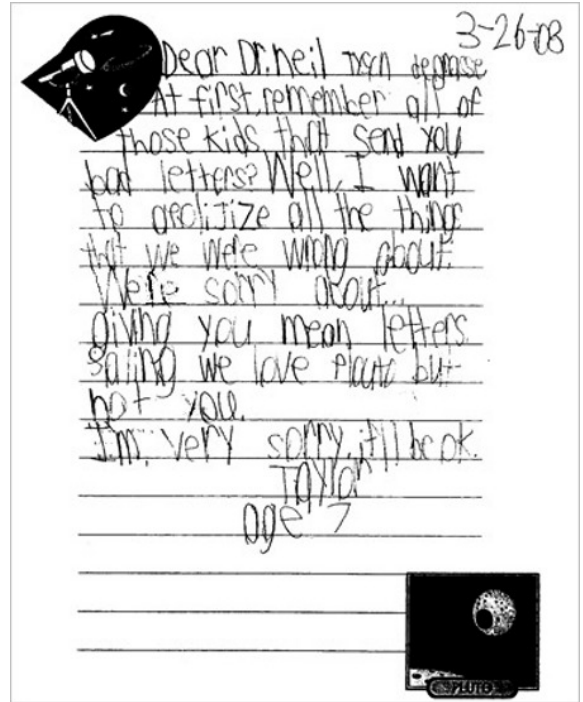
[Editors respond]: Neither. The theory is that the skull is that of a man-like ape. Doubts have been thrown upon the correctness of this theory, but the matter is by no means settled.



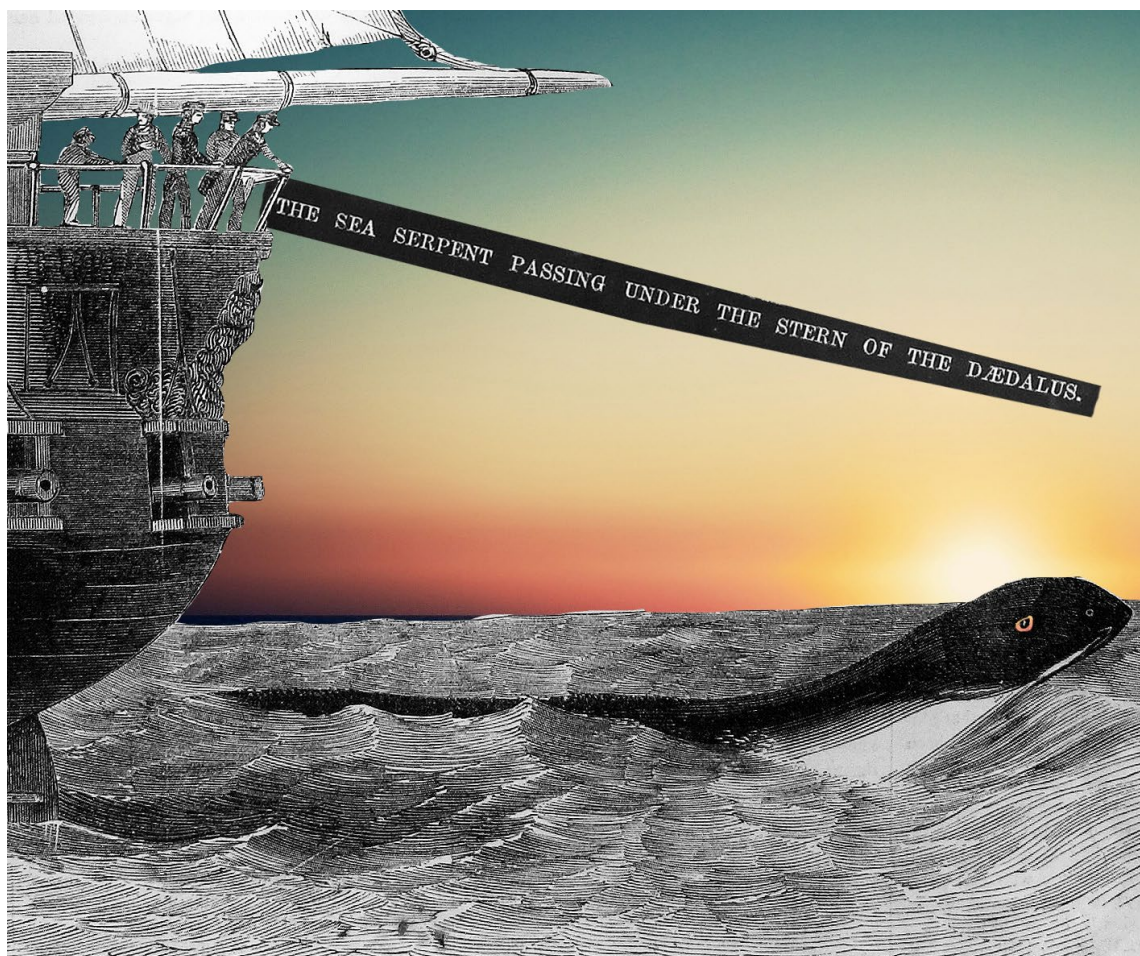
The letter above relates to our article “Ditsong’s Dioramas” in the present issue.



Pluto is the humblest of planetary bodies—so humble, in fact, that it was demoted by the Hayden Planetarium in the year 2001. The children of the world were less than pleased by the loss of a favorite planet, and they made their views known:



Letters appear courtesy of American Museum of Natural History



## Where Be Monsters?

### The Daedalus Sea Serpent and the War for Credibility

by Matthew Willis

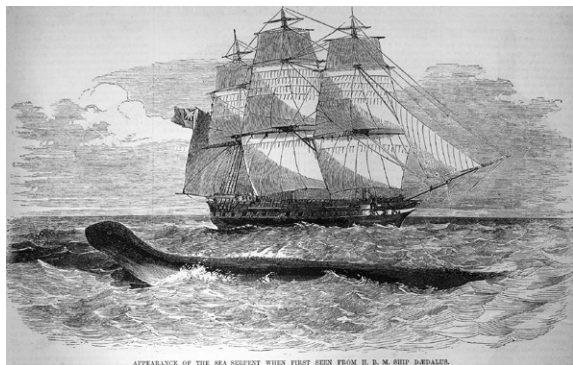
On 6 August 1848, Midshipman Sartoris of the Royal Navy corvette HMS *Daedalus* alerted the officers on the ship's quarterdeck to an unusual sight. The captain, first lieutenant, and sailing master were all present to see the approach of a large creature of a kind none had observed before. Captain Peter M'Quhae, in command of the vessel, described the encounter in his official report to the Admiralty:

It was discovered to be an enormous serpent, with head and shoulders kept about four feet constantly above the surface of the sea; and as nearly as we could approximate by comparing it with the length of what our maintopsail-yard

would show in the water, there was at the very least sixty feet of the animal *a fleur d'eau* no portion of which was, to our perception, used in propelling it through the water, either by vertical or horizontal undulation. It passed rapidly, but so close under our lee quarter that had it been a man of my acquaintance I should have easily recognised the features with the naked eye.

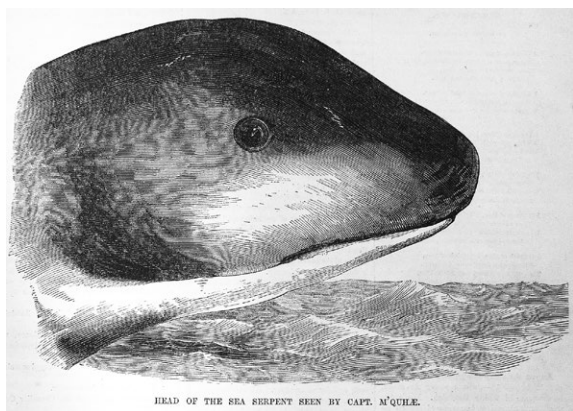
It's unfortunately typical of the sea serpent's treatment over the years that my first response on reading this was to write a novel about what might have happened next.





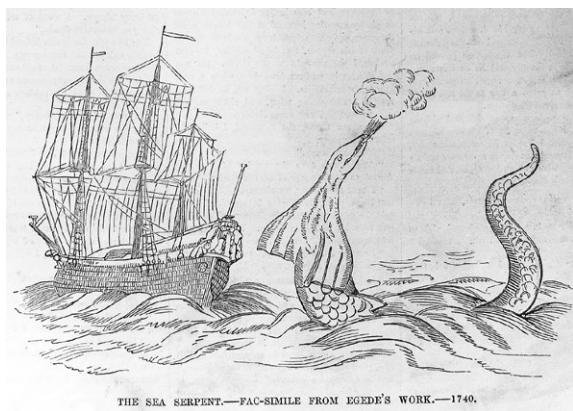
APPEARANCE OF THE SEA SERPENT WHEN FIRST SEEN FROM H. B. M. SHIP DÆDALUS.

*Gleason's Pictorial Drawing Room Companion,*  
July 1852



HEAD OF THE SEA SERPENT SEEN BY CAPT. M'QUHAE.

*Illustrated London News,* October 28, 1848



THE SEA SERPENT.—FAC-SIMILE FROM EGEDE'S WORK.—1740.

*Illustrated London News,* October 28, 1848

Perhaps I should have started by looking further into what actually happened, which initiated a debate that remains unresolved. The fictional crew of my *Daedalus* risk life and limb fighting a very real creature. The real crew of the *Daedalus* risked reputation and career by telling the world about something that perhaps some people weren't ready to hear.

An article about the sighting written a few years afterwards stated confidently "that there is such a creature, however, there can be little doubt, as his appearance has been so often alluded to." And that sighting, 165 years later, remains one of the best pieces of evidence for the existence of the giant sea serpent—a creature that has captured imaginations for centuries, yet remains elusive.

The *Daedalus* sea serpent neatly encapsulates the discourse around this mysterious creature: a mixture of public fascination and scientific dismissal. Almost from the instant the *Daedalus* returned to England, the crew's claims generated both child-like enthusiasm and determined rejection. The first public report of the sea serpent was in the *Times* of 10 October, six days after the corvette's return. The same newspaper later published comments by the biologist Sir Richard Owen, who claimed that the most likely explanation for the sighting was that it was an elephant seal swimming in open water. Owen suggested that what the officers had thought to be the creature's tail was the long eddy that typically trailed behind an elephant seal.

Captain M'Quhae angrily rejected Owen's claims, but the story was already causing a certain amount of embarrassment to the Admiralty. Questions arose in Parliament about how a Royal Navy captain could have allowed the report to be printed. Undeterred, M'Quhae collaborated with an illustrator to produce a series of engravings of the encounter, and these appeared alongside a copy of M'Quhae's report to the Admiralty in the *Illustrated London News*.

In addition to three images portraying the *Daedalus* sea-serpent, the paper reproduced an anatomical drawing of the "American Sea Serpent, *Scoliooph Atlanticus*" and an illustration representing a 1740 sighting off Norway.



Undoubtedly, much of the interest in the *Daedalus* sea serpent over the years has stemmed from those illustrations, which turned M'Quhae's rather clipped description into a living, breathing scene. Yet the characters of the witnesses from whose accounts the illustrations had been drawn were equally important. In an era with no photographs, these drawings were as good as it got: professionally-drawn illustrations based on the first-hand accounts of men whose reputations were close to unimpeachable.

The reliability of the witnesses was key. Royal Navy officers were expected to be steady, precise, and not prone to flights of fancy. Furthermore, in the mid-nineteenth century, the Royal Navy's officer corps was an increasingly scientific body. The developments in meteorology, weaponry, navigation and propulsion in the first half of the nineteenth century meant that all Royal Navy officers had to have an understanding of scientific principles, and a far more scientific outlook than their forebears.

Moreover, the Royal Navy was beginning to take more of an interest in exploration and discovery as the long *Pax Britannica* set in following a century of wars. This can be seen through the naval expeditions to the polar territories of Ross, Parry and Franklin (which you can read about in a previous Appendix article by Douglas Hunter), and no less importantly in the myriad surveying voyages such as those of HMS *Beagle*.

These developments reflected changes in British society. The British gentleman was an increasingly scientific creature. Moreover, science itself was developing into the more specialised field we know today. When the British Association for the Advancement of Science had been founded in 1831, its committee had selected a relatively nar-

row set of disciplines and rejected fields such as agriculture and music, despite determined lobbying.

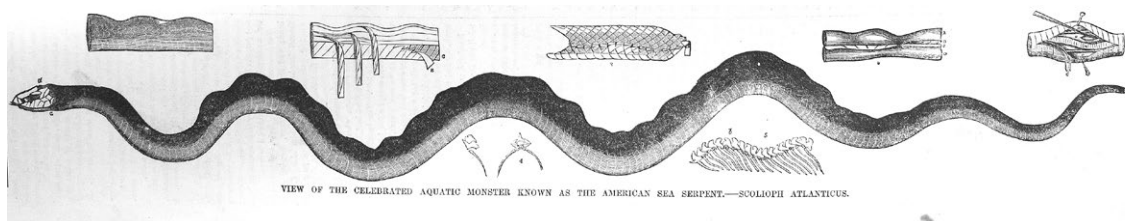
It's hard to imagine that men such as the officers of the *Daedalus* would have opened themselves up to the risk of career damage and social ridicule lightly. Indeed, they had every right to expect that their account would be evaluated methodically. Observation and recording of natural phenomena by 'reliable witnesses' was an important part of science in the early nineteenth century. Empiricism, in the true sense of the word—knowledge based on the evidence of your own eyes—was the essence of nineteenth-century naturalism, which at the time referred to all study of the natural environment including astronomy and geology.

In this light, the immediate attempts in some quarters to dismiss the sighting are surprising. The biologist Richard Owen, for example, seems to have reached for 'rational' explanations without considering for a moment that the sighting was indeed of a giant sea serpent. Owen, who coined the term 'dinosaur,' was no stranger to fantastic creatures. His suggestion that professional sailors who had spent a career at sea (M'Quhae became a lieutenant during the Napoleonic wars) might not have seen an elephant seal before is not entirely credible. His immediate leap to find alternative explanations is indicative of an attitude that was already becoming entrenched: sea serpents were not to be taken seriously by scientists.



There had been no shortage of reported sightings of sea serpents over the previous two centuries.

In the port of Gloucester, Massachusetts, a sea serpent was reported in the bay with startling



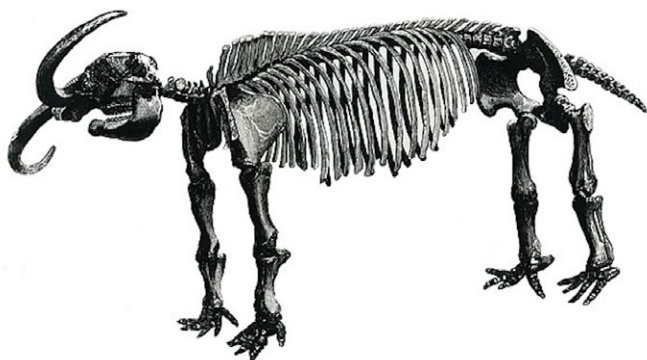
VIEW OF THE CELEBRATED AQUATIC MONSTER KNOWN AS THE AMERICAN SEA SERPENT.—SCOLIOPH ATLANTICUS.

'Scolioph Atlanticus'

*Illustrated London News*, October 28, 1848

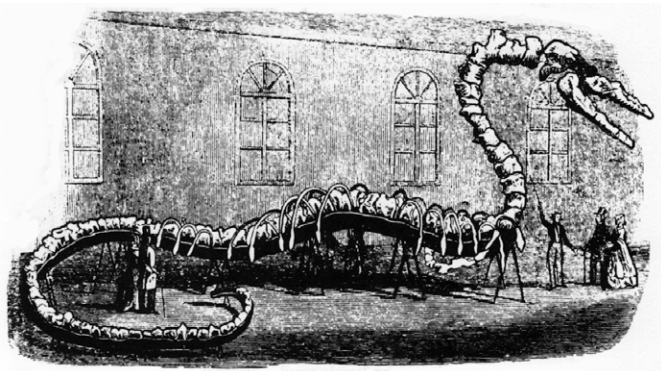
frequency from the mid-seventeenth century, culminating in eighteen sightings in the year 1817 alone. The twelve months following the *Daedalus* sighting produced two potential confirmations. Later in 1848, an American brig reported a similar creature in almost exactly the same place (between St. Helena and the Cape of Good Hope), and the following year a Royal Navy sloop made another strikingly similar sighting in the North Atlantic.

Yet the nineteenth-century scientific elite were not exactly open-minded about the existence of such creatures.



Koch's 'Missourium' skeleton, fraudulently cobbled together from multiple mastodons.

Wikimedia Commons



"Hydrarchos—or Leviathan of the Antediluvian World."

Wikimedia Commons

There are many reasons why this may be. Both errors and hoaxes had produced so-called proof of the existence of sea serpents in the recent past, which had swiftly been debunked. "Sea serpent fever" in New England generated by the numerous Gloucester sightings proffered one example. In fact, the very anatomical drawing of "*Scolioph Atlanticus*" attached to the *Daedalus* story originated in a bizarre mistake by a member of the New England Linnaean Society in 1817. The over-enthusiastic discoverer had found a deformed terrestrial snake on a beach, and took it to be the juvenile form of the sea serpent that had been causing a stir out in the bay. The error was quickly discovered, but apparently persisted thirty years later. The association of the *Daedalus* sea serpent with a well-known error can have done little to help its credibility in scientific circles.

This wasn't the only event that heightened professional skepticism around sea serpents even as it fed public enthusiasm for the creatures. Just three years before the *Daedalus* sighting, celebrated fraudster 'Dr.' Albert Koch unleashed his latest piece of paleontological trickery on a credulous public. Koch had earlier jumped on the bandwagon created by the discovery and display of fossil skeletons by respectable naturalists and developed it into his own brand of Barnum-esque showmanship. Koch's 'Missourium' skeleton, which he even managed to sell to the British Museum, was a fake cobbled together from several mastodon skeletons with additional blocks of wood to make it bigger, with the tusks pointing outwards (possibly to make it look fiercer, or just different from the existing mastodon skeletons on display).

With 'Missourium' successfully disposed of, Koch turned to the fashionable sea serpent for his next showpiece. The prehistoric whale *Basilosaurus* had been discovered in 1835, but as with the mastodon, Koch endeavored to go one better. In the first four months of 1845, Koch traveled across three counties known to contain *Basilosaurus* remains and assembled parts of at least six skeletons as well as pieces of other whale skeletons and even Ammonite

shells. The result was the 114-foot “Hydrarchos – or Leviathan of the Antediluvian World, As described in the Book of Job, Chapt. 41,” according to Koch’s promotional material.

Koch’s frauds had been immediately pointed out by naturalists including Owen, who had in fact been instrumental in the identification of *Basilosaurus* as a mammal, not a lizard as originally thought. This simply created greater publicity for Koch and increased the number of visitors. Koch sold the ‘Hydrarchos’ and promptly made a second one.

It was perhaps due to foolish errors like ‘Scolioph Atlanticus,’ as well as outright scams like ‘Hydrarchos,’ that claiming any association with a sea serpent could lead to widespread ridicule. By 1848, the sea serpent had already fallen into the domain of the pseudo-scientific. In another century, the giant sea serpent would become the poster-child for the new pseudo-science of cryptozoology, but this process had begun much earlier. The barrage of sea-serpent sightings was, in the mid-nineteenth century, already being met with a number of ‘explanations’—some of which were themselves seem to us more implausible than the idea of the sea serpent.

The desire to explain the *Daedalus* sea serpent as anything but a sea serpent didn’t go away. A decade after the incident, Captain Smith, of the *Pekin*, sighted a sea-serpent while the ship was becalmed near the Cape of Good Hope. It turned out to be a twenty-foot piece of floating seaweed “with a root shaped like a head and neck.” Smith had little hesitation in declaring that the *Daedalus* sea serpent (encountered not too far away, off St. Helena) must have been “a piece of the same weed.” The explanation was again swiftly denied in a letter in the *Times* of 13 February 1858. The author of the letter insisted that the sea serpent was “beyond all question a living creature, moving rapidly through the water in a cross sea, and within five points of a fresh breeze, with such velocity that the water was surging under its chest as it passed along at a rate, probably, of not less than 10 miles per hour.” Interestingly, the letter was signed simply as “An Officer of Her Majesty’s Ship *Daedalus*.” Each of the officers who had seen the sea serpent had been named in the contemporary reports,

so it is tempting to conclude that anonymity was now adopted for reasons of reputation.

The entry on sea serpents from the 1902 *Encyclopaedia Britannica* lists a string of “likely” phenomena mistaken for sea serpents. These include: A school of porpoises; a flight of sea-fowl; a large mass of seaweed; a pair of basking sharks; ribbon-fish/oarfish; giant squid; a whale, and a sea-lion. The encyclopaedia concludes that “with very few exceptions, all the so-called ‘sea serpents’ can be explained by reference to some well-known animal or other natural object.”

Many of the ‘rational’ explanations subsequently offered rely on substantial mistakes in interpretation, over-excitement, or difficulties with observation such as distance or poor light. It is hard to see how, assuming the phenomenon sighted behaved as the *Daedalus*’s officers described, it could possibly have been a piece of seaweed, or indeed a whale or elephant seal.



Whatever the reality, the number of reported sea serpent sightings declined rapidly after the nineteenth century. Writing in 1925, Austin Clark of the Smithsonian Institution offered a typical explanation for the decline. “In the last 20 years,” Clark noted, the size of ships rapidly increased and steam ships replaced sailing vessels. These maritime advances mean that the “vantage point” for observing the sea serpent moved “from the low and insecure wave-washed deck of a small sailing boat to the high, comfortable, secure, and relatively dry deck of a much larger steamer.” This shift in perspective “removed the element of fear and hence dulled the imagination so that sailors are now able to study calmly and report correctly what they see.”

The officers of the *Daedalus* may have had something to say at the suggestion that their sighting could be put down to a permanent state of fear generated by their “wave-washed ... small sailing boat.” (In reality, it was a 1,000-ton, 150ft ocean-going vessel.) Furthermore, sea serpent sightings did not stop when large steamships became the norm. Captain Sir Arthur Henry Ros- tron, who was later responsible for the rescue of



the Titanic survivors, reported seeing a sea serpent on April 26, 1907, while acting as Chief Officer of the RMS *Campania*. Nevertheless, the notion that the sea serpent sighting is an essentially age of sail phenomenon is intriguing.

Indeed, it is often assumed that reports of sea serpents originate due to poor conditions for observation—great distance, poor light or bad weather, for example. Yet this was not always the case. A meeting of the Zoological Society of London on the theme “Cryptozoology: Science or Pseudoscience” in July 2011 discussed the large number of sea serpent sightings made in good conditions for observation, such as that of the *Daedalus*. As palaeozoologist Dr. Darren Naish of the University of Southampton observed:

People that work on this area (most notable among them the ichthyologist Charles Paxton) argue that, while many accounts can be re-interpreted as sightings of known animals, there is still a hard-core of decent sightings, often reported by experienced, qualified observers, which describe animals as yet unknown.

Naish professed his frustration “that many people seem to find it utterly inconceivable that one can be interested in cryptozoology (perhaps even interested enough to publish on the subject). Yet

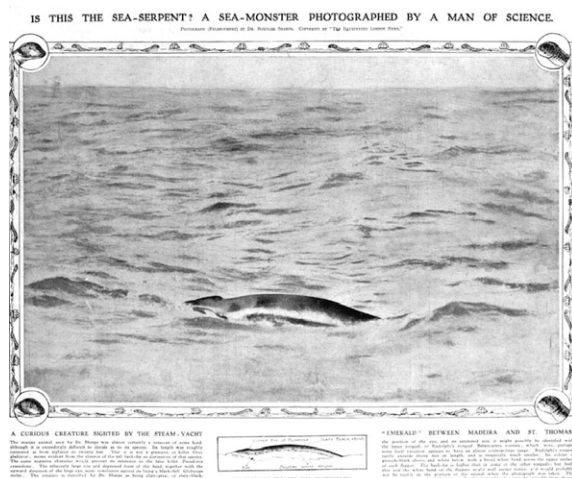
they remain strongly skeptical of eyewitness testimony in general, of the existence of alleged cryptids, and of the claims made in the cryptozoological literature.”

Attitudes to cryptozoology may be changing. A 2009, a study sought to assess how many large species of marine creature might still await discovery. Interestingly, the study took the approach of combining statistical methods with a study of so-called ‘grey literature’—pseudo-scientific sources not recognized by the scientific establishment.

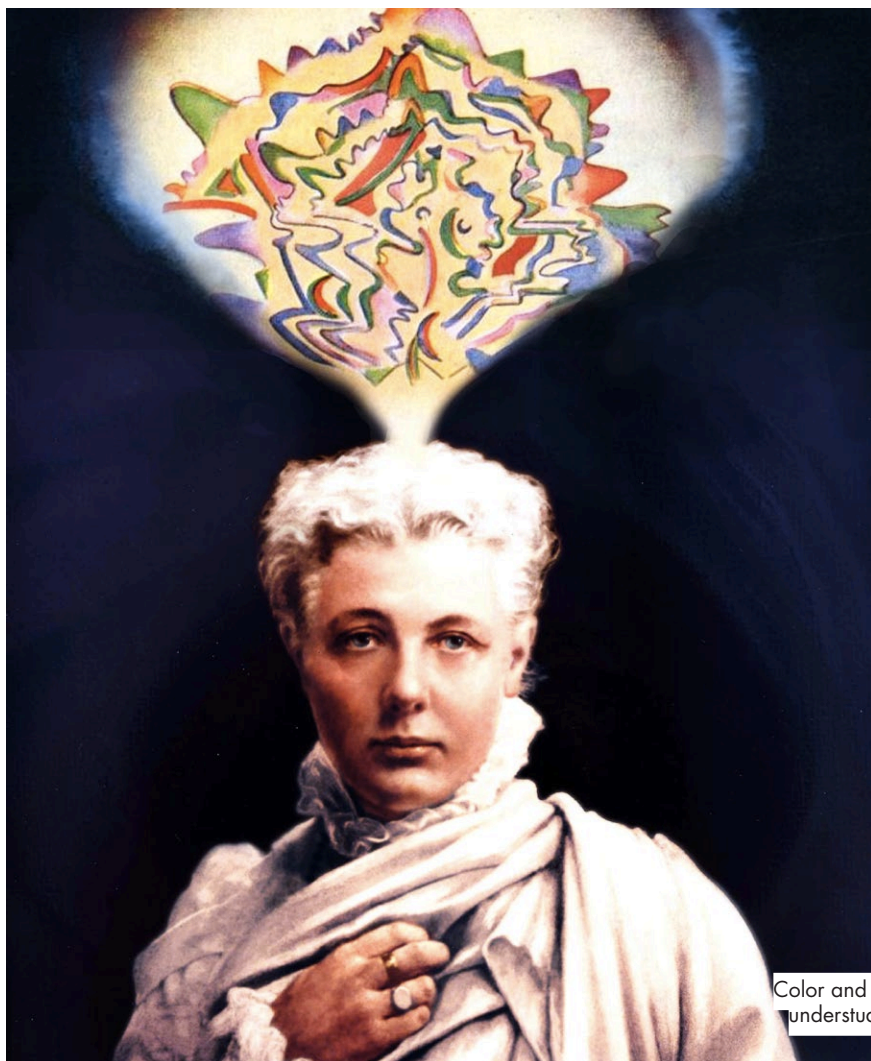
“Because cryptozoological data are mostly discussed in the ‘grey literature,’” the authors observed, “appraisals of these cryptids have never appeared in the mainstream literature, perpetuating a cycle whereby these putative animals remain unevaluated.”

In other words, the giant sea serpent has passed from pre-modern ‘here-be-monsters’ speculation into the contemporary equivalent of Fortean conspiracy theories without any real scientific evaluation. For all the thousands of reported sightings throughout the centuries, no firm evidence to prove or disprove the existence of such a creature as that reported by the *Daedalus* has ever been produced. Perhaps the time will come when the officers of the *Daedalus* will finally be vindicated. At the very least, we should take them seriously as historical actors. Did the officers suffer any harm to their careers or their social lives as a result of their honesty? Did the Admiralty discourage further reports for fear of further ridicule in parliament? What was it that made the scientists so quick to ignore the witnesses’ reports?

Above all though, the abiding question is the same as it has always been. Just what was it that they saw?



Rostron's sea serpent, 1907.  
Illustrated London Daily News



Color and synesthesia have played an understudied role in the whole arc of Western occultism.

# Victorian Occultism and the Art of Synesthesia

by Benjamin Breen

"I have always considered myself a voice of what I believe to be a greater renaissance—the revolt of the soul against the intellect—now beginning in the world," wrote William Butler Yeats to his mentor, the Irish nationalist John O'Leary, in 1892. Yeats believed that magic was central not only to his art, but to a dawning epoch when spirituality and technology would march together toward an uncertain future.

*Thought-Forms*, a strange, beguiling, frequently pretentious, utterly original book first published in 1901, emerged from this ferment of late-Victorian mysticism. It was written by Annie Besant and Charles Leadbeater, erstwhile members of the London Theosophical Society alongside Yeats, and it features a stunning sequence of images that illustrate the book's central argument: emotions, sounds, ideas and events can all manifest as visual auras.

The book's grand ambitions are evident from the first page. "To paint in earth's dull colours the forms clothed in the living light of other worlds," Besant laments, "is a hard and thankless task." She insists that the images in the book "are not imaginary forms, prepared as some dreamer thinks that they ought to appear." Rather, "they are representations of forms actually observed as thrown off by ordinary men and women." And she hopes that they will make the reader "realise the nature and power of his thoughts, acting as a stimulus to the noble, a curb on the base." This grandiloquence was typical: *fin de siècle* occult leaders produced some of the most baroque writing in literary history, the purplest of purple prose. Yet what are we saying, exactly, when we call black words on a white page "purple"?

These sorts of underlying associations between words, colors and sounds were precisely what motivated *Thought-Forms*. In other words, the book was about synesthesia (a phenomenon in which one sensory pathway, like sound, simulates another, like vision). The illustration of the music of Mendelssohn reproduced above, for instance,



"The music of Gounod"

depicts yellow, red, blue and green lines rising out of a church. This, Leadbeater and Besant explain, "signifies the movement of one of the parts of the melody, the four moving approximately together denoting the treble, alto, tenor and bass respectively." Moreover, "the scalloped edging surrounding the whole is the result of various flourishes and arpeggios, and the floating crescents in the centre represent isolated or staccato chords." Color and sound had become commingled.

Yet *Thought-Forms* sought not only to visualize sound, but to demonstrate the distinctive psychic gifts of the authors: the ability to detect spiritual "vibrations" of ideas, emotions and sounds as visual forms. This, in other words, was a sort of spiritual synesthesia, as much a religious act as a neurological one.

Besant and Leadbeater were not romantically linked, but they were nonetheless a power couple in the world of British secret societies. Leadbeater had originally been ordained as a priest in the Church of England, but he developed an intense fascination with Buddhism and Hinduism following travels in Burma and Sri Lanka with Henry Steel Olcott in 1885. He grew convinced that he possessed powerful psychic abilities and became a disciple of Madame Blavatsky (later immortalized as Madame Sesostris in T.S. Eliot's *The Waste Land*). Following Blavatsky's death, Leadbeater met Annie Besant, a women's rights activist and socialist orator, and the two struck up an unorthodox partnership. By the 1890s they had emerged as the leaders of the preeminent theosophist group in London.

In an 1892 pamphlet, Besant summarized theosophy's core principles. Mankind was "a spiritual intelligence... treading a vast cycle of human experience, born and reborn on earth millennium after millennium, evolving slowly into the ideal man." It must be said: theosophy was bunk. It combined social Darwinism and echoes of Neo-Raphaelite romanticism with a kind of Westernized, mashed-together Buddhist and Hindu thought, then topped it with a dash of High Church ceremony and a healthy heaping of obfuscatory verbiage. The result, more often than not, was pompous, pseudoscientific nonsense.



But, in the case of Thought-Forms, what wonderful pseudoscientific nonsense it was.

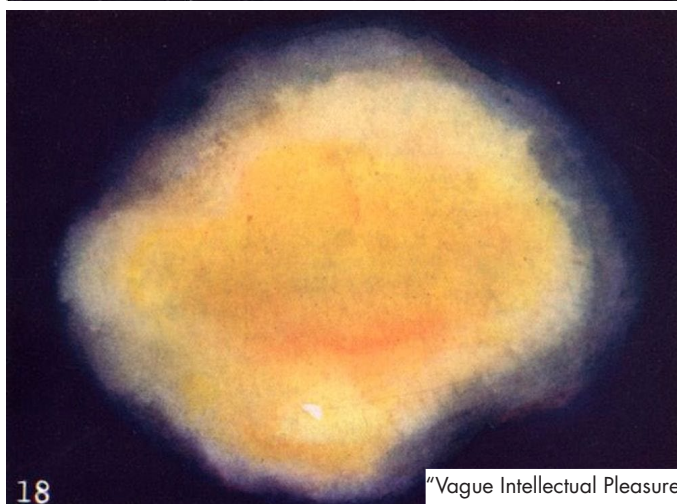
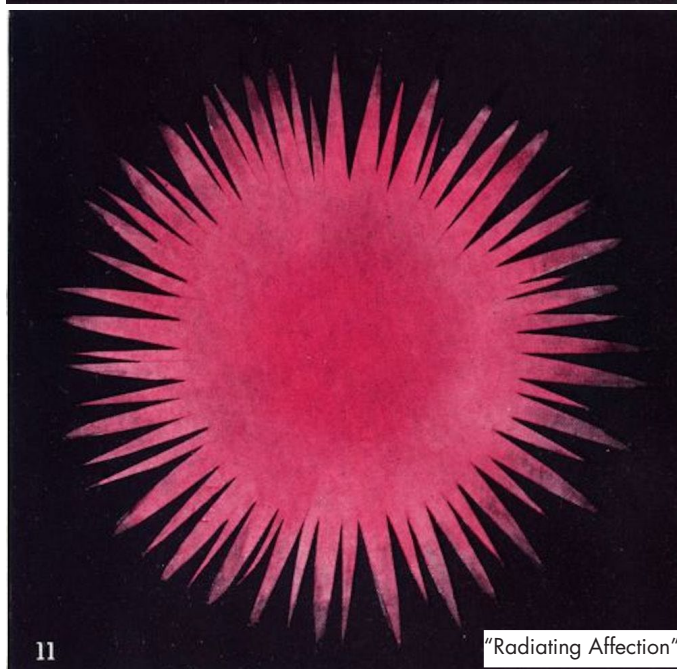


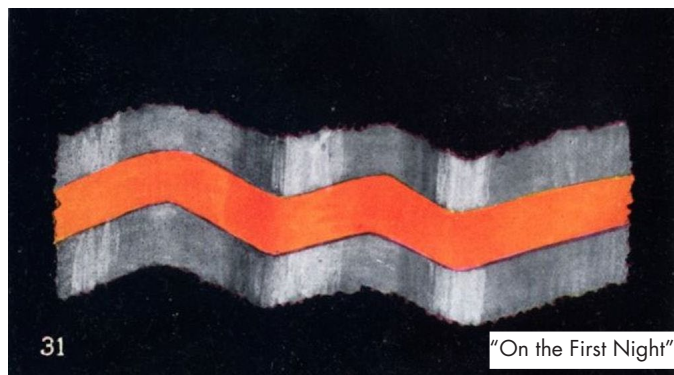
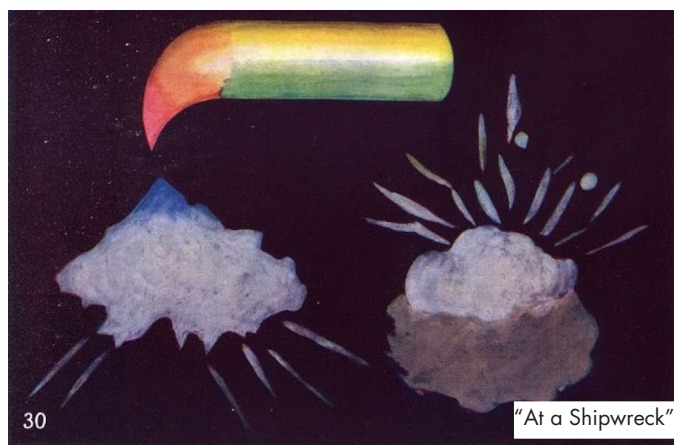
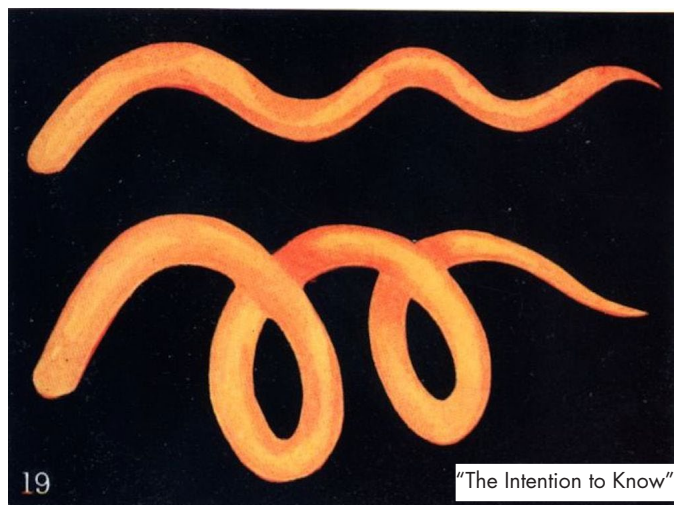
Colors stood at the core of theosophy as practiced by Madame Blavatsky and Anne Besant, and indeed it has played an understudied role in the whole arc of Western occultism. In his 1704 book *Opticks*, Isaac Newton's arbitrary division of the spectrum into seven colors (ROYGBIV) resulted in the quasi-color indigo, whose questionable differentiation from blue befuddles schoolchildren to this day. This was not the act of Newton the scientist, but Newton the alchemist: he had been guided toward the number seven by the seven musical notes and the seven planets, not by scientific necessity.

Blavatsky built on these ancient numerological resonances and the Newtonian theory of color in her book *The Secret Doctrine* (1888) to construct an entire cosmological system around the seven colors, which she called the seven rays. Each ray corresponded to a group of historical figures ("Masters" or "Mahatma") who were reborn in an unending cycle, and each had a characteristic color. In Besant and Leadbeater's elaboration of Blavatsky's ideas, the various permutations of the theory become impossibly confusing. People of the yellow and pink rays, evidently, "were docile," the orange had a "hatred of sexual unions," and the black (predictably, given the racial politics of the time) were "the lower classes," while "the higher classes were of a quite respectable blue."

Color, in other words, dominated the theosophist vision of both the distant human past and the post-human future. And color is the biggest takeaway from *Thought-Forms*. While the prose is baroque, clumsy and hard to follow, the visuals that accompany it are simply enchanting, suffused with mellow blues, misty purples, and brilliant ochres and oranges.

With the thirtieth illustration, the book changes course in an interesting way, moving





from illustrations of discrete thoughts and emotions to quasi-narratives about events.

Occasioned by a "terrible accident" at sea, Besant and Ledbetter explain, the thought-forms above "were seen simultaneously, arranged exactly as represented, though in the midst of indescribable confusion." The book continues:

they are instructive as showing how differently people are affected by sudden and serious danger. One form shows nothing but an eruption of the livid grey of fear, rising out of a basis of utter selfishness: and unfortunately there were many such as this. The shattered appearance of the thought-form shows the violence and completeness of the explosion, which in turn indicates that the whole soul of that person was possessed with blind, frantic terror, and that the overpowering sense of personal danger excluded for the time every higher feeling.

This ushers in the visual heart of the book, featuring images that wouldn't look out of place hanging alongside early Malevich or Kandinsky abstractions.

Figure 31 is another narrative piece, representing "the thought-form of an actor while waiting to go upon the stage." The authors explain that the orange band indicates self-confidence, "yet in spite of this there is a good deal of unavoidable uncertainty as to how this new play may strike the fickle public, and on the whole the doubt and fear overbalance the certainty and pride, for there is more of the pale grey than of the orange, and the whole thought-form vibrates like a flag flapping in a gale of wind."

Other thought-forms in this section anticipate another twentieth-century craft that was still in its infancy in 1901: corporate branding. Figure 41 is meant to represent "the Logos as manifested in man" but it looks like more like logos as manifested by ad men: one can easily reimagine the image as an early oil company badge, competing with Esso, Brit-



ish Petroleum and Royal Dutch Shell to lure horseless carriage drivers off darkened roads and toward glowing gas pumps.

Figure 38 is even more radical a departure, anticipating the Pop Art of the 1960s:

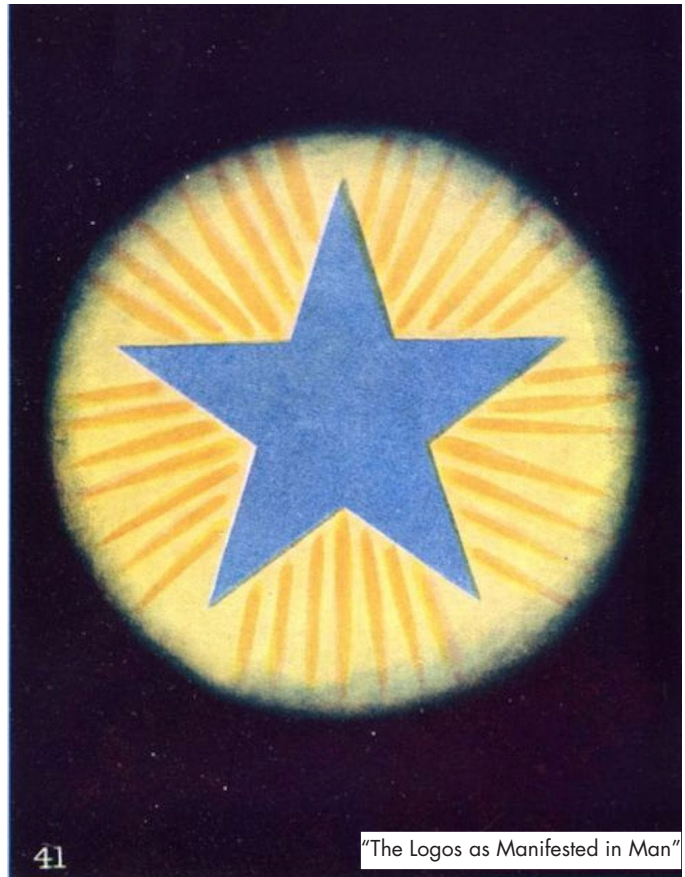
The description of the event depicted here anticipates the 1960s as well with its combination of meditation and idealism: it was “generated by one who was trying, while sitting in meditation, to fill his mind with an aspiration to enfold all mankind,” the authors relate with characteristic somberness, “in order to draw them upward towards the high ideal which shone so clearly before his eyes.”



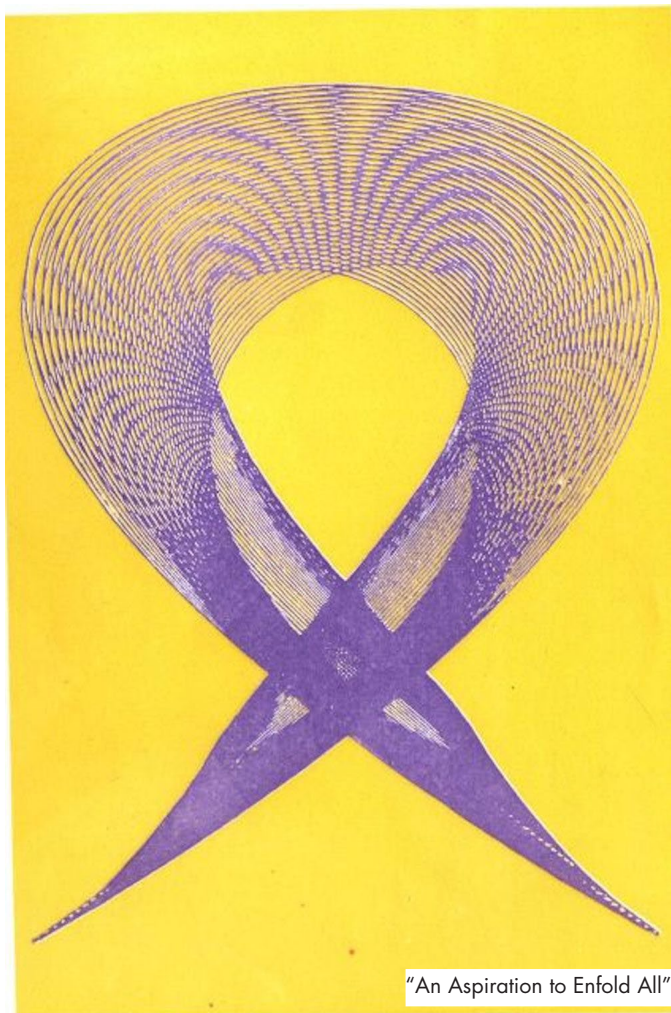
Besant and Leadbeater were quite aware that this was heady stuff for a society that remained deeply conservative. On New Year's Day in 1901, the year *Thought-Forms* was published, Queen Victoria still ruled England. Oscar Wilde had died a broken man five weeks before. The British Empire was still expanding. “Modernism” as a movement or even a concept did not exist.

When we consider this world of 1901, it becomes difficult not to believe that Besant, Leadbeater and their milieu deserve a more prominent place in the annals of both abstract art and the history of modernism. As the art critic Hilton Kramer has observed, “what is particularly striking about the outlook of the artists primarily responsible for creating abstraction is their espousal of occult doctrine.” Kramer points to the period between 1910 and 1920 as the key moment—as it undoubtedly was, given the confluence of World War One, the Dadaists, and technological changes celebrated by the Italian Futurists.

But perhaps we should look backward as well, to the twilight of the Victorians, in tracing these origins. It actually isn't at all surprising that figures like Yeats and T. S. Eliot—not to mention Malevitch, Kandinsky, and Mondrian—dabbled with theosophy. It was, as Kramer notes, “a widely established compo-







"An Aspiration to Enfold All"

nent of Western cultural life" in the first decades of the twentieth century.

But where did it go? Casting a wider net in the shadowy realms of *fin de siècle* mysticism offers up some surprising answers. Jack Parsons, one of the founders of the Jet Propulsion Lab at Caltech and an early pioneer of rocketry, counted himself as an adept of Aleister Crowley—and so too, at one time, did Scientology founder L. Ron Hubbard. Robert Oppenheimer famously quoted Vedic scripture ("Now I am become death, destroyer of worlds") when he witnessed the first atomic bomb blast. But in the context of figures like Besant and Ledbetter, Oppenheimer's fascination with Eastern mysticism seems less like a personal quirk and more like a thread in a larger tapestry: an interweaving of mysticism, technology, and art that began at the turn of the last century and is still with us in the twenty-first.

Yeats imagined a looming "revolt of the soul against the intellect." In truth, Victorian mysticism never took over the world. But it also didn't go away. One strand wove into the history of science and technology; another became the New Age Movement; another is emerging in the techno-utopian transhumanists of Silicon Valley, who (seemingly unwittingly) borrow themes and aims from theosophy.

It's hard to know where it all will take us. But it seems fair to say that Besant and Ledbetter played a small but intriguing role in shaping the globalized culture of the twenty-first century, which weaves together East and West, mysticism and rationalism, sound and sight. The result is a maelstrom of competing stimuli, influences and aims that even a seasoned synesthete would struggle to make sense of. But it's worth our while to try.

# Hunting Gorillas in the Land of Cannibals: Making Victorian Field Knowledge in Western Equatorial Africa

by Elaine Ayers

With a groan that had something terribly human in it and yet was full of brutishness, he fell forward on his face. The body shook convulsively for a few minutes, the limbs moved about in a struggling way, and then all was quiet—death had done its work, and I had leisure to examine the huge body.

—Paul Du Chaillu on killing a male gorilla,  
*Explorations and Adventures in Equatorial Africa*, 1861

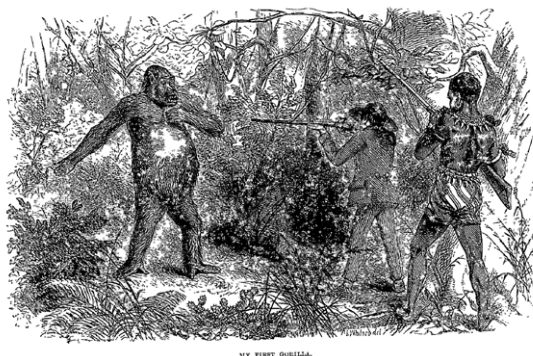
By most accounts, Paul Belloni Du Chaillu made an exemplary African field collector. Born on the island of Reunion in 1831 to a French trader and a mother of (potentially African) unknown origins, the swarthy boy demonstrated a remarkable knack for languages at an early age. Alternating between his studies at an American Protestant mission school on the coast of Gabon and working for his father's trading company, Paul Du Chaillu somehow found time to train in hunting Africa's Beast Among Beasts (now known as the Western lowland gorilla) under John Wilson—the coastal collector supposedly responsible for felling Britain's first gorilla in the late-1830s.

Realizing that his education could only take him so far in Gabon, Du Chaillu left to explore his first *terra incognita*—Philadelphia. Within a matter of months, the young explorer had made a name for himself in the American natural history lecture circuit, thrilling wealthy patrons with his stories about sweltering African jungles and their animal inhabitants.

Despite general interest in his work in the American Academy of Sciences, his patrons denied Du Chaillu financial support for travel—a fact that he failed to realize until after his return to Philadelphia from an 1855 collecting expedition to Gabon. Subsequent lectures and expeditions may have been attempts, in part, to pay off his resulting debts.

Before long, Du Chaillu grew weary of his role as lecturer and entertainer, yearning for scientific credibility and, certainly, the funding that came along with professional status. By a series of lucky connections and a web of supportive associations, the collector's stories made their way into the most important conversations about the Dark Continent, circulating in Britain's Royal Geographical Society (RGS). While admittance to the increasingly professionalized RGS required backing from a contemporary fellow, some particularly worthy field collectors won membership simply because of their contributions to controversial and exciting fields.

By midcentury, Victorian natural historians—and the rising middle-class reading public—seemed hungry for information from formerly inaccessible regions of Africa, occasionally bending scientific standards like established sponsorship for stories on things like apes, cannibalism, fetishism, and deviant sexuality. This slight slip in RGS standards provided Du Chaillu with a valuable opportunity. The explorer's language acumen, “tolerably thorough acclimation,” and connections to Gabonese coastal traders promised to serve him well among the fascinating “tribes of the interior.”



Du Chaillu's “first gorilla.”

Paul Du Chaillu, *Explorations and Adventures in Equatorial Africa*.

If he could collect new animal specimens, observe scintillating African behaviors, and cover fresh territory in the interior, Du Chaillu stood a good chance of leaving his status as “field collector” behind and making his way into a royal society.

A number of excellent histories have been written about Paul Du Chaillu and his role in the Royal Zoological Society’s “Gorilla Wars” of 1861. Because of his apparent racial ambiguity, prolific (and entertaining) writing, and general habit of stirring up professional controversy, Du Chaillu has received his fair share of published coverage. Missing from these histories, however, is Du Chaillu’s intense reliance on his “tribes of the interior” in producing what came to be seen as ‘Western’ scientific knowledge. Gabon’s interior became a site where an explorer could negotiate his social and scientific position using African interpretations of moments of scientific ambiguity.

Victorian stories about black bodies, gorilla bodies, and cannibalized bodies tend to be read as merely racist products of anthropological ignorance. Moving beyond this, though, we can attempt to read through these Western texts to understand how Western Equatorial Africans themselves understood the political, social, and environmental unrest surrounding them. Du Chaillu, like most other explorers, entered a pre-existing network of knowledge and exchange. In his efforts to paint himself as a quintessential white, professional, Victorian explorer, Du Chaillu in fact positioned

himself within a far more complex system of African storytelling, and storytelling in general.

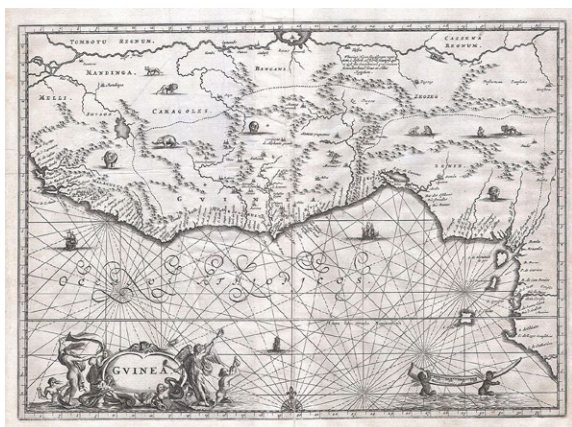


Narratives about the field collector and his duties, widely discussed in both scientific societies and in the Victorian popular press, circled around an inherent sense of physicality. These men (for they were almost exclusively men) survived extreme climates, trekked across treacherous landscapes, felled dangerous animals, and found themselves in the constant company of “savages”—all in the name of advancing scientific knowledge. As colonial expeditions opened up new inroads into Western Equatorial Africa, ethnographic accounts moved from relative scientific obscurity to sensationalized fascination, nervously read by Victorian elites. The accounts that generated the most press, and oftentimes the most money, hinted at the foggiest in classifying animals as separate from humans, at the temptations towards savagery rampant in the Dark Continent’s jungles, at what all of this might mean for readers in their drawing rooms back home.

Successful field collectors and their invisible African counterparts exhibited, above all else, physical strength, hunting acumen, and a discerning eye for useful observation. Paradoxically, many of these same traits supposedly characterized the indigenous Fang communities living in Gabon’s interior, employed by Du Chaillu as porters, hunters, and informers. Fang men were, until very recently, presented in ethnographic accounts as possessing heightened masculinity and as fierce warriors—their sharpened teeth no doubt colored impressions of Rousseau-inspired savagery.

Comprehensive studies of the Fang are still limited, and many of our anthropological accounts of this region are outdated. This large group of Bantu speakers inhabit the interior forests of Cameroon, Equatorial Guinea, and Gabon.

Historian Mary Louise Pratt argues that Du Chaillu, among others, unconsciously used his ‘hyphenated status’ (determined by race and social class) to inform his interpretations of Africa. It is common knowledge that Western explorers defined their whiteness, masculinity, and general superiority against the savage, ape-like, and deviant ‘other.’ It should be said, though, that studying on-the-ground interactions with the Fang tends to complicate Pratt’s theory. The situation, like most historical situations, is complex.



This 17th century map of West Africa reveals the European ignorance of the areas interior regions.  
Wikimedia Commons





Despite his desire for professional scientific credibility, Du Chaillu's strengths lay in the very traits required of field collectors. He was known, within the royal societies, as a gorilla hunter. Well-familiar with the demand for gorilla specimens by the Royal Zoological Society and the British Museum, the young explorer recounted an almost unbelievable number of close encounters with the apes. In describing these graphic, disturbing hunts, Du Chaillu placed less emphasis on his examination of the "huge bodies" of gorillas so desired by natural historians, and far more on the image of the live gorilla, on his own hunting prowess, and on the beast's slow and painful death. Surrounded by his Fang hunting companions, the explorer tracked down "an immense male gorilla," writing that:

When he saw our party he erected himself and looked us boldly in the face [...] Nearly six feet high, with immense body, huge chest, and great muscular arms, with fiercely-glaring large deep gray eyes, and a hellish expression of face, which seemed to me like some nightmare vision: thus stood before us the king of the African forest.

The societies funding his expedition needed, above all else, gorilla skeletons to study and display back in Britain. Preserving specimens in the tropics and keeping them safe on months-long journeys across the ocean, however, proved difficult. One gorilla specimen made it back to the British Museum, but zoologists generally had to make due with illustrations and textual descriptions of gorilla behaviors. What they got from Du Chaillu, though, was probably a series of sensationalist hunting stories. This, then, forced RGS fellows to question whether the young explorer truly was describing real gorilla encounters, or whether he was playing into popular, sensationalist desires for drama and death.

Time and time again, Du Chaillu claimed that he, alone, was responsible for the kills. This might not seem remarkable on the surface, because it fulfilled such typical hunting tropes. However, Du Chaillu's singular obsession with his kills stands out when his fixation with the physicality of field work is compared with works about gorilla en-

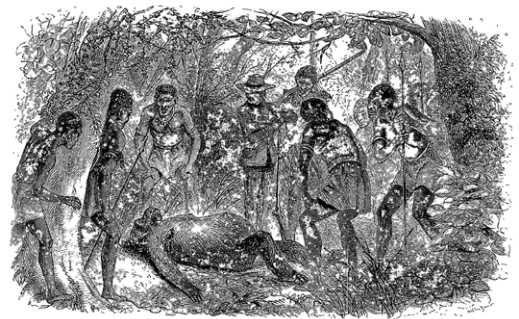


THE GORILLA.

FRONTISPIECE.

A male gorilla, featured as the frontispiece to Du Chaillu's tome.

Du Chaillu, *Explorations and Adventures*



DEATH OF THE GORILLA.

Du Chaillu kills a gorilla.

Du Chaillu, *Explorations and Adventures*

counters by other explorers attempting to recreate his expedition.

Respected explorer Richard Francis Burton embarked for Gabon only a few years after Du Chaillu returned. In contrast to De Chaillu's emphasis on prowess, Burton claimed that in hunting, "everything depends upon 'luck.'" He went on to admit that he "utterly failed in shooting a gorilla," and even that "the Gorilla is a poor devil ape, [...] not the king of the African forest." Returning to these same Gabonese forests later in the century, anthropologist and adventuress Mary Henrietta Kingsley characterized a family of gorillas as "ladies" and a "young gentleman," uttering "a quaint sound between a bark and a howl."

Du Chaillu's stories about the king of the jungle certainly sold a number of books to intrigued and horrified upper- and middle-class Victorian readers. However, the stories' sensationalism—published largely in popular culture magazine *The Athenaeum*, and later in a series of children's books—failed to convince professional natural historians of any semblance of geographic or zoological accuracy. In grappling for proof of his success as a credible field collector, Du Chaillu undermined his professional opportunities.



If Du Chaillu didn't, in fact, directly participate in so many successful and dramatic gorilla hunts, as I suggest, then he had to get his ideas about the savage apes elsewhere. Despite scientific society's calls for an African specimen collection and anthropological observation, few explorers had actually made it into Gabon's interior before Du Chaillu's expedition. Once in Gabon's overwhelming forests, comparing plant and animal species to field guides would have been next to impossi-

After the publication of *Explorations and Adventures* in 1861, a number of well-known explorers with more formal training went to Gabon in efforts to correct Du Chaillu's more controversial findings. Burton and Kingsley, among others, denied his claims about gorilla savagery and presented murkier findings on Fang cannibalism. Perhaps to Du Chaillu's credit, other explorers gave far more colonial accounts of their travels through Gabon. Burton finished his days with "quinine, julienne and tea, potatoes and potted meats, pipes and cigars," while Kingsley repeatedly noted her "continual desire for hairpins."

ble. Fang informants guided Western explorers to known gorilla nests and passed on successful tracking and hunting methods. In all likelihood, Fang communities informed more than just field knowledge—their stories about gorillas and cannibalism eventually made their way into Western 'scientific' writing. Certainly, Du Chaillu's more sensationalist passages about gorilla kidnapping, rape, and torture played into Victorian readers' thirst for shocking evidence of assimilation and simiation.

Curiously, the passages also reflected Fang anxieties about colonialism, trade, and environmental change. In Du Chaillu's words, "one of the [Fang] men told a story" about a Mbondemo woman raped by a male gorilla, and "one of the men told how" a gorilla attacked and tore the fingernails off of sugarcane workers. "Finally," he wrote, "came the story that is current among all the tribes who are acquainted with the habits of the gorilla"—the beast waited for passersby and then silently choked them. Rather than reading these stories as mere "fantasies of racist outsiders" designed to sell books, we can study Western incorporations of African stories to reveal more complex Fang speculations predating the arrival of explorers. Fear of gorillas' physical similarity to men ran rampant in Fang as well as Victorian society. For the people who encountered the beasts regularly, gorilla stories pointed to the blurriness of the human/animal boundary, and stood in as metaphors for unexplainable atrocities.

Perhaps the most unexplainable atrocity of all existed in stories of human cannibalism. Du Chaillu relied exclusively on the Fang in describing his 'observations' of cannibalism among people of the interior. Western texts have recycled the cannibalism theme in countless contexts and narratives, particularly during the period of colonial expansion. It is, of course, easy to see how cannibalism may have been used as a narrative device intended to shock readers and to represent an utter lack of morals in supposedly uncivilized peoples. But stories of cannibalism also circulated among Western Equatorial Africans both as representations of loss of bodily control and as a scare tactic designed to confine trade to one's own community.

In her extensive study of Gabonese storytelling during colonialism, historian Florence Bernault pushes these analyses further, claiming that reports of cannibalism functioned as a “hidden conversation across the racial line, and in tangible battles where Europeans controlled black bodies while Africans attacked, stole, and recycles white ones.” Fang stories of cannibalism crossed spiritual and physical boundaries and were often represented in fetish worship, expressing fears about social reproduction. Despite the fact that cannibalism did not, in fact, occur in Western Equatorial Africa, stories circulated throughout most West African societies, in white settlements along the coast, and in sensationalist and scientific texts back in Britain.

Most incredibly, Du Chaillu claimed that he directly observed instances of cannibalism among the Fang. Upon arriving at a village in the interior, he wrote:

I perceived some bloody remains which looked to me to be human; but I passed on, still incredulous. Presently we passed a woman who solved all doubts. She bore with her a piece of thigh of a human body, just as we should go to market and carry thence a roast or a steak.

The encounter is a curious one. Clearly, Du Chaillu expected to observe cannibalism upon arriving in Fang land based on stories told by other Western Equatorial Africans and on Victorian fears about these relatively unknown people. Nevertheless, he claimed that his direct visual experience “solved all doubt” raised by circulating stories. It is possible that these ludicrous passages truly were products of an editor’s creative work. In any case, Du Chaillu’s apparent ‘field knowledge’ existed within frameworks of what Victorian readers expected when buying an African travel account, and what Western Equatorial Africans talked about in the interior. Whether or not he actually believed that he saw a Fang woman carrying a human thigh off for consumption, his story provided such a striking image that other explorers traveled to Gabon over the next few decades to disprove the myth.



HUNTER KILLED BY A GORILLA.

A Fang hunter is lost to the hands of a gorilla.  
Du Chaillu, *Explorations and Adventures*



ENCAMPED FOR THE NIGHT.

Storytelling around the campfire at night.  
Paul Du Chaillu, *Explorations and Adventures*

Although she claimed that she would “not tell you any cannibal stories,” Mary Kingsley was sure to mention that the Fang had “no slaves, no prisoners of war, no cemeteries, so you must draw your own conclusions.” Burton remained skeptical, noting that coastal Africans told these stories to “deter foreigners from direct dealings,” and that “a joint of ‘black brother’ is never seen in the villages; ‘smoked human flesh’ does not hang from the rafters.” Interesting scholarship has suggested that Du Chaillu tested the boundaries of his whiteness and civilized superiority by treading dangerously close to cannibalism himself.





Edward Rice Burroughs' *Tarzan of the Apes*, 1921.  
 Wikimedia Commons



Fang stories about the environment, fetishism, and colonialism still receive little treatment in colonial historiography. Because these stories were largely oral, historians have little evidence to go on beyond Western field accounts. These field accounts, which were ultimately incorporated into scientific texts back in the royal societies, were produced in an ambiguous grey area between Fang storytelling and Western expectations. The explorer was required to report on in-demand subjects by financiers at the royal societies, was promised fame and fortune by educated Victorian readers of sensationalist travel stories, and worked in the field alongside (and often at the mercy of) Fang informants, hunters, and traders.

Stories of gorillas and cannibalism, like stories of fetishism and sexuality, were socially charged across both continents. Boundaries blurred in African storytelling, field notes, popular travel accounts, and authoritative scientific writing. Gorilla specimens themselves became secondary to sensationalist, controversial hunting stories. Stories about cannibalism yielded very real consequences on black bodies, supporting colonial civilizing missions in the interior.

Paul Du Chaillu never achieved the professional scientific credibility that inspired his expeditions. After struggling to make his way into the Royal Geographical Society for the next decade, the explorer embraced his role as collector and entertainer, publishing a number of popular travel books and eventually dying on a trip to Russia in 1903. In the wake of his death, fact and fiction continued to overlap as Carl Akeley embarked on gorilla expeditions to Western Equatorial Africa, and a pulp novel titled *Tarzan of the Apes*, a novel based on Du Chaillu's stories, captivated the imagination of young readers.

WARNING!



low on Polynesian mana

## The History of Mana: How an Austronesian Concept Became a Video Game Mechanic

by Alex Golub

On January 17, 2007 the dimensional ship *Exodar* crash-landed on Azuremyst Isle, just off the northwest coast of Kalimdor. Amidst the suffering and wreckage, the survivors took stock of the new world they had found a land—which was, like them, part of the on-line video game *World of Warcraft*. They were draenei, an uncorrupted race of Eredar that had been added to the game as part of its *Burning Crusade* expansion pack. I decided to play one, mostly because I was getting tired of playing dwarves and elves. I named him Izzycohen and taught him how to make jewelry.

Two years later Izzycohen had become a mighty shaman, a healer who aided his allies in battle by casting healing rays of light that the guys I played online with called ‘Jesus Beams.’ The Naga Warlord Naj’entus kept killing us, however, and so I spent about two hours adjusting my armor to make my healing spell a tenth of a second faster (because, trust me, one tenth of a second is a long time in *World of Warcraft*). When I say ‘my armor,’ what I really mean is a spreadsheet I used to ana-

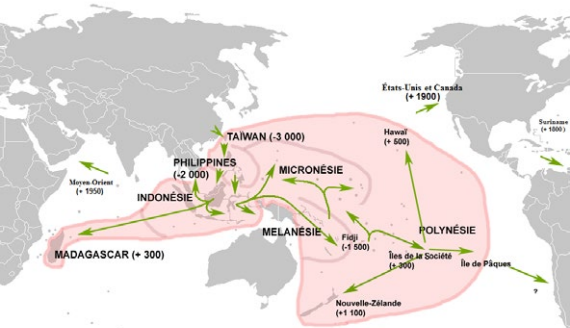
lyze every piece of armor my character wore. Each piece of gear—the helmet, the chest piece, the chainmail legs—altered my character’s powers. My goal was to increase the amount of ‘Haste’ he had without giving up too much mana.

Spellcasters rely on mana. In *World of Warcraft*, mana is a magical energy possessed by druids, mages, paladins, priests, shamans, and warlocks, which is measured in points. Different spells cost different amounts of points. Much of the game mechanic revolves around managing and using mana wisely: casting spells often enough to achieve your goal, but not so often that you run out of mana early. Characters that go ‘oom’ (‘out of mana’) can no longer help their friends, and are helpless if attacked. Characters can replenish their mana by eating mana strudel and mana biscuits. Mana oil can be applied to weapons to increase the rate that their bearers regenerate it. Mana looms are required to weave enchanted cloth. Magical beasts such as mana leeches and

mana serpents roam the land, ready to prey on spellcasters.

But mana, unlike ‘draenei,’ is not something that the designers of WoW invented whole cloth. Like ‘tattoo,’ ‘taboo’ and ‘tiki,’ ‘mana’ is a word from the Polynesian branch of the Austronesian language family. In twenty-seven of these languages, the word mana means something like ‘supernatural power.’ Pacific Island cultures are the origin of the concept of mana, and yet more people in the world have learned about the concept from WoW or other fantasy games. At its height, there were more players of World of Warcraft than Pacific Islanders: there were ten million players worldwide in North America, Europe, Latin America, and China (among others). At this time there were only about 6.7 million people in the combined population of Tonga, Fiji, Samoa, Vanuatu, New Zealand (including Pakeha, or white, Kiwis), and all the Pacific Islanders in the US. And Warcraft is really just the start. The concept is a staple of the global culture of fantasy novels and video games, many of which feature a blue bar of magical energy called ‘mana.’

But how did this happen? How did a concept from Pago Pago become part of global gaming culture? How did an Austronesian spiritual force come on board the Exodar, and become part of the life of my draenei shaman? To answer this question we have to return to the Pacific, and to the Austronesians themselves.



We first catch sight of them 5,500 years ago. We call them ‘the Austronesians’ because that’s the name we’ve given to the language we think they spoke. Just as French, Greek, and Hindi share the common ancestral language of Indo-European, the native people of Taiwan, island Southeast Asia, some of mainland Southeast Asia, Madagascar, and much of the Pacific speak Austronesian languages. And just as anthropologists and linguists have reconstructed Indo-European culture (the chariots, the sacrifices, the epic poetry) so too have they pieced together a coherent picture of the Austronesians. Like the Indo-Europeans, they liked to travel. Around four thousand years ago Austronesian speakers began expanding outward from their homeland in Taiwan, moving south and west in voyages that make Indo-European migration seem puny. Austronesians were seafarers, building rafts and canoes capable of breathtaking journeys. Some expanded west as far as modern day Mozambique and settled Madagascar. Mostly they moved east: across Indonesia, the New Guinea mainland, through Vanuatu and the way to New Zealand and Hawai’i. They eventually reached the Americas, bringing back sweet potato and calling it ‘kumara’, borrowing the name from American Indian languages. They were probably matrilineal, reckoning descent through women rather than men. They made amazing pottery decorated with human figures, and imagined their leaders to be strangers of great power who came from far away. In fact, we know an amazing amount about them—unless we don’t. Although most people have never heard about it, the world of Austronesianists can be disputatious.

One of the things we do know is that as they headed out into the Pacific, they brought the word ‘mana’ with them. Its origin is lost in the mists of time, although the linguist Robert Blust has argued the word originally meant ‘powerful wind,’ ‘lightning,’ or ‘storm’—as it indeed still does in some languages. From there, he argues, it seems likely that the term shifted meaning and kept the sense of power and efficacy while losing its primary meteorological referent. Aram Oroi, a pastor and theologian from the island of Makira in the Solomon Islands, says that mana is like a flashlight being turned on. You sense something powerful but unseen, and then—click—its power is made manifest in the world.

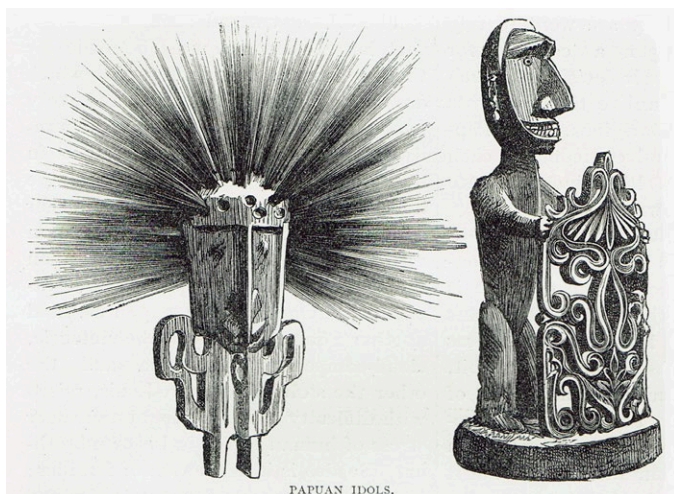
A map of the remarkably rapid expansion of Austronesian languages.  
Wikipedia user Maulucioni,  
based on previous work by Christophe Cagé



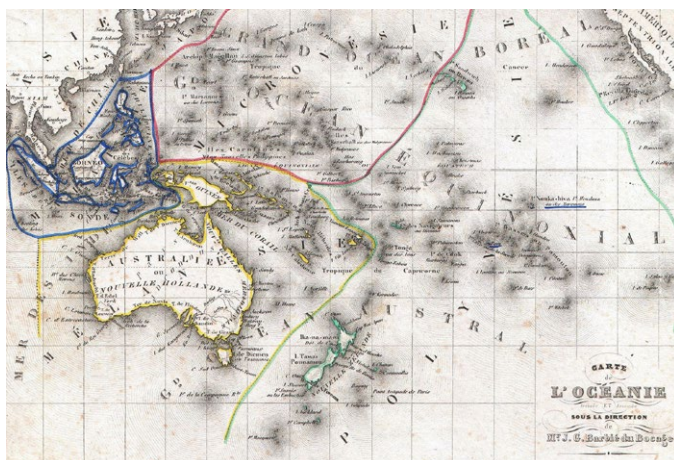
It took centuries for Europeans to catch up with Austronesian-speaking people in their exploration of the Pacific. When they did, they were astounded. In 1769, James Cook made his way to Tahiti, where he met Tupaia, a Rai'atean nobleman who was “the Machiavelli of eighteenth century Tahiti.” Europeans like Cook knew little about the geography of the Pacific, so Tupaia made Cook a map of the Pacific with over fifty islands on it. He then proceeded to journey with Cook, leading him to New Zealand, where he served as interpreter. On this and other trips Europeans were gobsmacked. How could people living thousands of miles from each other, across huge expanses of open ocean, speak languages as closely related as French or Spanish? How could they navigate to these islands without clocks or sextants? What they had not yet realized—what would take many years to grasp—was that the ocean was something that *connected* Pacific Islanders, rather than separating them.

Those European attempts to understand the Pacific were at first racist and ham-fisted. In 1832 the French nobleman Durmont D'urville divided the Pacific into three realms: Polynesia, Micronesia, and Melanesia. Melanesia—literally where the black people lived—was seen as the most savage, while the more lightly-complected Polynesians of Hawai'i, New Zealand, and Tahiti were considered more civilized. Micronesia was pretty much was everything that was left over. We still use these categories today, despite their conceptual inadequacy. Austronesian languages and cultures, for instance, can be found in all three areas. Mana crosses the lines Europeans drew.

Over time Europeans slowly began to understand the languages and cultures of Polynesia, which had a relatively simple and short history of migration. Further west, however, more mysteries beckoned. ‘Melanesia’ had seen human habitation for 40,000 years, and its mixture of cultures, languages, and genes is much more complex.



“Papuan Idols,”  
in *With the World's People* by John Clark Ridpath, 1912.  
[Wikimedia Commons](#)



J. G. Barbie du Bocage's 1852 map of Oceania, showing the tripartite division typical of early European attempts to understand the languages and cultures of the Pacific.  
[Wikimedia Commons](#)

One of the first people to study this area was Robert Henry Codrington. Codrington was born in 1830 England to a long line of Anglican clergymen, and became one himself after passing through Charterhouse and Oxford, two of England's most elite institutions. In 1867 he moved to Norfolk Island, off the coast of Australia, to begin service with the Melanesian Mission.

Founded in 1849, the Mission's goal was to spread Christianity and Civilization to the southwest Pacific, especially what is known as 'Island Melanesia'—Vanuatu, the Solomon Islands, and the Bismark archipelago and bits of the New Guinea mainland. By today's standards the Mission's self-confidence may rankle, but compared to other Victorian colonial projects it was very well-behaved: the goal was to civilize, but the missionaries treated Melanesians as equals—by which was meant that it assumed that they could, with practice, act with the decency and commonsense of Englishmen. Most importantly, the Mission felt that conversion should not be rushed. Local cultures had to be learned and local languages carefully studied, perhaps for decades, before they could be understood. In fact, the main goal was to train Pacific Islanders to act as evangelists in their home communities.

When Codrington arrived at Norfolk Island in 1867, his job was to run the school where potential evangelists would be taught. But Codrington did more than that. For the next twenty years he was the island's jack of all trades. He was the chief cook of the school, and produced plum puddings



A drawing of a church at the Melanesian mission, 1926.  
[Anglicanhistory.org](http://Anglicanhistory.org)

for the marriage feasts of his students. He dabbled in architecture, designing a dining hall for the school, and worked as a stone mason, finishing marble columns for the church on the island ("I never tried to carve stone & am afraid" he wrote in a letter). He learned how to print books, take photographs, and teach people to play the harmonium. Eventually, he served as the head of the mission from 1871 to 1877 before retiring to England.

Europeans had been sniffing around Melanesia for over a century by the time that Codrington had gotten there, but few had spent as much time as he had living and working alongside Melanesians. Fewer still had travelled across the region the way he had, and none were as hell bent on spending their retirement as a gentleman scholar producing a massive ethnographic work about their experiences. Codrington's masterpiece, *The Melanesians: Studies in their Anthropology and Folk-Lore* appeared in 1891. One of the ideas that he had 'discovered' was mana.

"The Melanesian mind is entirely possessed by the belief in a supernatural power or influence, called almost universally mana," wrote Codrington in *The Melanesians*:

This is what works to effect everything that is beyond the ordinary power of man, outside the common processes of nature; it is present in the atmosphere of life, attaches itself to persons and to things, and is manifested by results which can only be ascribed to its operation. The word is common I believe to the whole Pacific... It is a power or influence, not physical, and in a way supernatural; but it shews itself in physical force, or in any kind of power or excellence which a man possesses... All Melanesian religion consists, in fact, in getting this Mana for one's self, or getting it used for one's benefit.

Codrington's work generated tremendous excitement amongst its the late-Victorian audience. Codrington's expertise was unimpeachable: he was a careful thinker with decades of experience in Melanesia and (of course) an Oxford man. Moreover, his book was one of the first ever written about Melanesia: there was no competition. But there was more to it than that. By the late 1890s European knowledge of the world was growing in



leaps and bounds. Philology and archaeology had revealed thousands of years of history in the ancient Near East that predated the world described in the Hebrew Bible. Missionary and ethnological work provided accounts of ‘religious’ beliefs (for so were they labeled) of colonial subjects. And translations of Buddhist, Hindu, and Confucian texts—as these traditions came to be labeled in the West—revealed an entire world of thought whose antiquity and complexity made Christendom blush.

A synthetic story of human civilization seemed within reach: a single, authoritative, scientific account of the development of civilization, from the lowliest savages to the highest peaks of civilization—by which Europeans meant, of course, themselves. As Europeans went about the job of deciding just how far beneath themselves other people were, Codrington’s concept of *mana* took on a new significance. Could *mana* represent the most basic, embryonic form that religion could take? Could it be the seed out of which Christianity would eventually spring? Could this belief in a universal spiritual force be similar to the concepts of *orenda*, *zemi*, and *oki* found in other regions as far away as Native North America? Was there in fact a universal human awareness of a generic cosmic force?

The answer, we now know, is ‘no.’ Under closer scrutiny it became clear that the idea of *mana* as the universal and most primitive experience of the sacred is crap.

And yet ‘*mana*’ as the universal, primitive experience of the sacred persists in popular culture today, from *Star Wars*’ “The Force” to Max Long’s fake-Hawaiian New Age religion of ‘*huna*’. How could the concept of *mana* as a generic spiritual force become invalidated and ubiquitous at the same time?

One answer can be found in the story of Mircea Eliade. Born in Romania in 1907, Eliade began his academic career studying the philosophy of Renaissance Italy. A detour took him to India, where he studied South Asian languages and Indian philosophy, eventually producing a Ph.D. dissertation on yoga in 1933. Throughout the 1930s and 40s, Eliade lived as an intellectual and writer



Eliade’s work fixated on the thresholds between the sacred and the profane, focusing on concepts like the Norse world tree Yggdrasil (pictured here in a seventeenth-century manuscript illustration) and *mana*, which bridged the ineffable spiritual and material realms.  
Wikimedia Commons

in Romania, inadvertently spawning numerous Wikipedia edit wars by possibly—or possibly not—becoming a fascist. By the end of World War II Eliade had washed up in France, where he had a position at the *École Pratiques des Hautes Études*. It was there that he wrote the two works that presented his master philosophy: *The Myth of the Eternal Return* and *Patterns in Comparative Religion*.

Eliade believed that all humans had a fundamental experience of the sacred: an a-cultural unmediated experience of the divine which he called ‘hierophany.’ But because the divine was overwhelmingly powerful and incomprehensible, no human being could fully grok it. Rather, Eliade argued, our experience of the divine is shaped by our culture, which filters it and makes it comprehensible. Eliade proposed a global comparative study of the culturally distinct shaping of hierophany. In it, *mana* was ‘kratophony’, the experience of divinity as power, not a primitive or backward concept, but merely one among many. This was the genius of Eliade’s framework: It was a new humanism, like the humanism of Renaissance Italy, but one that respected all cultures and treated them equally. It was to be an entire academic discipline, one dedicated to documenting the history of human spirit.



And, conveniently, it was a discipline that could be overseen and administered by Eliade himself.



Eliade's chance to realize his goals came in 1956 when he was hired at the University of Chicago. There, Eliade used his position at the Divinity School to become a hegemonic force. He trained graduate students, founded an academic journal, wrote an ambitious three-volume synthesis of the history of religious ideas, edited an encyclopedia, and published an anthology of readings for classroom use which included, among other things, Codrington's writings on mana.

Eliade embraced the massive growth of cheap paperbacks that flourished in the United States after World War II. Series such as Harper Collins's "Torchbook" specialized in publishing books for the rapidly-expanding college market, and Eliade churned out volume after volume, repeating the themes of his earlier writings. These were in turn re-anthologized by Eliade's students and followers. It would be a stretch to call this an Eliade industry. But not much of a stretch.

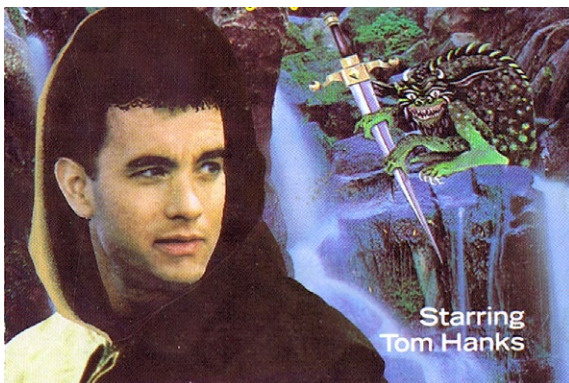
His timing was perfect. In the late 1950s a massive bolus of baby boomers was slowly being pushed through the American education system and out into the counterculture. These young people were looking for strange new worlds to replace the square one they had grown up in. Psychedelia famously provided a way to explore inner space, but young Americans began looking outside their country for cosmic assistance as well. Intellectuals

such as Victor Turner and Joseph Campbell were widely read. Eliade was just a small part of this cultural movement, but he was a key part for our story because he was one of the few academics who read about the Pacific and wrote about mana—a concept that might otherwise have disappeared in the deluge of European and Asian cultural material being consumed by the baby boomers.

And consume it they did—especially in California, where mana made the leap from the counterculture to gaming. Alan Watts wrote *The Way of Zen* in 1957, introducing the United States to Japanese Buddhism. The San Francisco Zen Center was founded in 1962, as was the Esalen Institute at Big Sur. Timothy Leary published *The Psychedelic Experience* in 1964. In 1965 *Lord of the Rings* was published in paperback in the United States, beginning decades of Tolkienmania and legitimating the burgeoning but disrespected genre of fantasy fiction. In 1966 the "psychedelic medievalism" of the San Francisco Bay Area gave birth of the Society for Creative Anachronism—the same year the Beatles began producing psychedelic music and George Harrison introduced fans to the raga.

This was world that received *Dungeons and Dragons* when it first appeared in 1974. The first modern role playing game, D&D's key innovation was to combine the rule systems of tabletop wargaming with the setting of fantasy fiction and the interpersonal improvisation and role-playing that had been percolating in gaming and fan communities for years. D&D would fundamentally shape all future video games, role playing games, science fiction and fantasy, and global popular culture more generally. Its influences ricochet across recent cultural history like twenty-sided dice in a rolling tray. Even in the backlash it was powerful: the anti-D&D made-for-TV movie *Monsters and Mazes*, for instance, was one of Tom Hanks's first leading roles and helped lead him to megastardom.

Mana did not make it into the D&D rulebook because Gary Gygax and the other creators of D&D based their magic system on the novels of Jack Vance, where a limited number of spells could be memorized, cast once, and then forgotten. But it didn't matter. The gaming and fantasy world that gave birth to D&D soon spawned an entire ecosys-

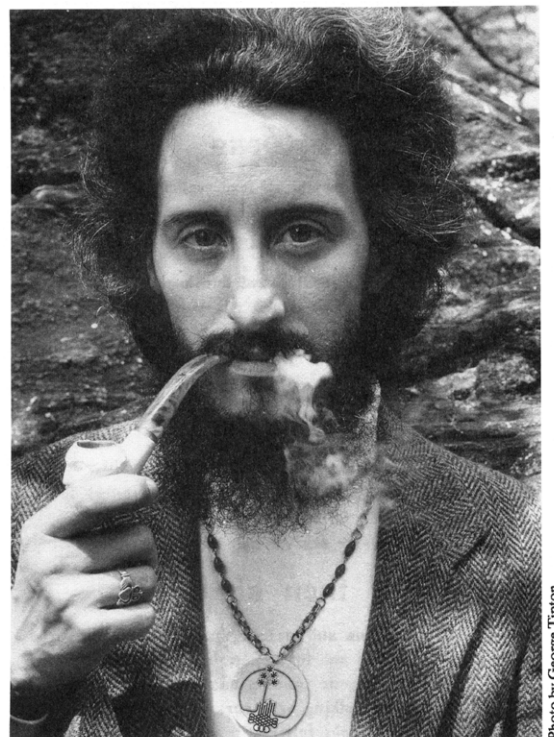
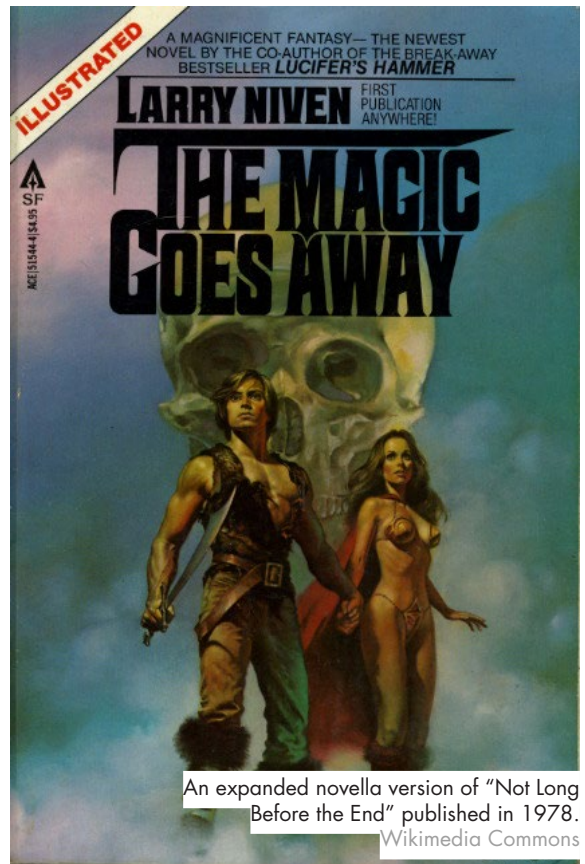


A young Tom Hanks sizes up his foe.  
VHS cover of *Mazes and Monsters*, 1982

tem of derivatives, many better than the original. They often used the expedient of ‘spell points’ or ‘energy points’ to model magic use: spells cost points to cast, you had a set pool of points to spend on whatever spells you wanted to case, and when you used up your spell points you were spell-less. Spell points made good sense in terms of game mechanics, but they didn’t make sense in terms of the fantasy worlds where these games took place. What force were spell casters drawing on? The concept of mana came to the rescue.

Mana has been floating around fantasy and gaming fandoms for some time, partially because of Eliade, but also because of Larry Niven. In 1969, Larry Niven published the short story “Not Long Before The End.” The story was set in the distant past, when the environment was suffused with mana. Wizards consumed mana by casting spells, slowly using it up. The result was our current, disenchanted world. Published four years after Frank Herbert’s *Dune* and the same year as the Santa Barbara oil spill, some people saw in Niven’s work an ecological message about nonrenewable resources. In fact, Niven’s inspiration was a book he had read in college: Peter Worsley’s *The Trumpet Shall Sound*. Worsley’s book described cargo cults in New Guinea, many of which drew on Austronesian visions of the distant past as a time of powerful ancestors whose knowledge and capacities had been imperfectly handed down to us in the present. The story was superbly told, frequently anthologized, and resulted in several spin-offs. As a result, word of mana spread.

In California’s atmosphere of psychedelic medievalism, Eliade’s influence was more direct. The Bay Area was home to a variety of growing movements: the Society for Creative Anachronism, growing neo-paganism, and a lot of people who were into D&D. One of them, David Hargrave, produced a variant of *Dungeons and Dragons* in the mid 1970s that he published in a series of books known as the *Arduin Grimoire*. Hargrave built the magic system for his game with the help of Isaac Bonewits, the future Archdruid of the New Reformed Druids of North America. Bonewits shared Eliade’s love of synthesis and sense of adventure—he had a bachelor’s degree in ‘magic’ from the University of California, a major of his own design. Bonewits certainly read Eliade, and worked to synthesize



*Philip Emmons Isaac Bonewits*

Wikimedia Commons



the disparate religious systems he read about into a single system. The result, was ‘neo-paganism’ a movement that Bonewits helped found. In fact, in 1978 Bonewits produced the book “Authentic Thaumaturgy” which described how to create in-game magic systems based on how *real* magic worked. The Arduin Grimoire, RuneQuest, and other games drew strongly on Bonewits expertise with ‘real’ magic when they designed their ‘fantasy’ versions.



D&D’s leap from the tabletop to the computer happened almost immediately, although it took a bit longer for mana to follow it. The computer, like LSD, was created by America’s military industrial complex, only to be appropriated by the counterculture as a tool for self-expression. A lot of this appropriation took place in Silicon Valley, within driving distance of Isaac Bonewits’s coven. It was a match made in heaven: the same egg-heads who played D&D and read Larry Niven also programmed computers. The speed with which

people wrote D&D-inspired video games was breathtaking: Dungeons and Dragons hit shelves in January 1974. By August 1975 the first computer version appeared.

This earliest computer games inspired by Dungeons and Dragons were pretty crude—too crude, in fact, to have the complex spell mechanics of table top games. It would not be until the 1980s when computer games would have complex implementations of magic. When they did, the most influential ones used a spell point system. Ultima III appeared in 1983 and used magic points, which were abbreviated in on-screen as ‘MP.’ Final Fantasy, the famous Japanese role playing game, also adopted MP when it appeared in 1987. That same year, in the States, the highly influential video game Dungeon Master made it clear that the ‘M’ in ‘MP’ stood for mana.

The world of computing games was not immune to external influences. Mana was also making inroads elsewhere. In 1993 Richard Garfield produced Magic: The Gathering, the game the single-handedly created a whole new genre of geekdom: the trading card game. In Magic: The Gathering (M:tG as it is known) players imagined themselves as powerful wizards, battling with each other for supremacy. Two players faced off against each other, playing cards drawn from a their own custom-designed decks. Each card was (to simplify a bit) a monster or enchantment which could be used to attack the other player’s cards. Strategically, it was a blast. But the game’s addictive twist was cards were sold in baseball card-like packs. You never knew exactly what you would find when you opened a fresh pack, and the result was a ginormous secondary market where players bartered, traded, about bought cards as part of their quest for a perfect deck.

Mana was central to M:tG: it was the magical energy that players harvested from the land (that is, small cards with pictures of land on them) and used to activate the cards in their hand. If this sounds reminiscent of Larry Niven’s “Magic Goes Away” series, it’s because it was. The game even included a magical disk that consumes all magical creatures and artifacts around it, just as Niven’s story had. It is even called “Nevinyrral’s Disk,”





which betrays the disk's origins to anyone who can read backwards.

M:tG proved immensely popular, and video game designers played it alongside everyone else. That included the people at Blizzard Entertainment. Originally located in Irvine, the people at Blizzard played M:tG to take a break from designing video games, as did their sister company, Blizzard North, which was based in the Bay Area. It was a tightly-knit world: One of Blizzard North's artists, Michio Okamura, had previously illustrated volumes of the *Arduin Grimoire*.

Blizzard made history in 1994 with the release of the computer game *Warcraft: Orcs & Humans*. This first *Warcraft*—*Warcraft I* as they now call it—was innovative because it was a “real time strategy” or “RTS” games. Most older strategy games had basically worked like chess: you moved all your units, pressed the ‘end turn’ button, then the computer moved all its units, and so on. *Warcraft* took advantage of the computing power of the new PCs and ran in ‘real time’—you gave your armies orders and they carried them out right before your eyes. The game had a different rhythm than today's jittery, gun-heavy slaughterfests, something more akin to a slow and mounting sense that things were building up than an adrenaline rush. The sense of buildup was increased by the fact that you were literally building up: In *Warcraft* you commanded an economy as well as an economy. You started with just a few peons and then slowly built farms, barracks, lumber mills, and castles. You had to keep the resources flowing to keep the soldiers pushing the front forward.

Spell-casting units in *Warcraft* used a spell point mechanic, and their magical energy was measured by a green bar. What kind of magical energy was it? No one seems to be sure. Apparently the developers had never developed a backstory for their game deeper than “orcs and humans fight.” The reasons why were made up by one employee, who made it up the backstory as he went along.



A mana potion from *Flare RPG*, an open source game inspired by *Diablo*.  
*Flare RPG*

Warcraft II, released in 1995, changed all that. Now there was a guy whose whole job was to create world for the game to take place in. In this game, mana was the official unit of magical energy and the bar that measured it had turned blue. In 1996, Blizzard North produced the first Action-RPG, Diablo. Diablo had even less backstory than Warcraft (“everyone wants to hit a zombie with a club,” opined Blizzard North founder Max Schaffer, “but not everyone wants to read badly written fantasy text.”), but it did have a large blue orb that measured mana. Mana was now part of Blizzard’s lexicon.

Soon whole fantasy universes sprung up around Diablo and Warcraft. More games came out: Warcraft III and its expansion Warcraft III: The Frozen Throne. The racial confrontation of orcs versus humans mutated into a confrontation between two multi-species alliances: Horde versus Alliance. More factions joined—now you could play elves and dwarves. The cut scenes grew elaborately beautiful and featured realistic three-dimensional characters fighting in battles recorded with jerky, cinema verité camera style. When the first Infernals of the Burning Legion land on Azeroth, it looks like the event was filmed by a TV crew afraid for their lives. The stories connecting the battles became almost belle lettristic—half grudge match, half soap opera, as the plots and character from games written years apart turned into a world, a legend, an ethos. By the time that World of Warcraft launched in 2004—on the tenth anniversary of the release of Warcraft I—Warcraft had become an elaborate mythic world the size of the Iliad and a profitable franchise rivaling McDonalds. Mana was an inseparable part of it.

For Pacific Islanders, the history of mana is important because it is about them: their lives and their heritage. To video game players it is important, and for pretty much the same reasons. Once an import, mana has now become part of our culture. Some might be tempted to read the story of mana as a tale of cultural appropriation in which Westerners ransack the culture of the colonized. They may be right. Missionaries, anthropologists, and historians put mana between the pages of their books and stored it in libraries all over the world. But gamers did something else with it: They cared for it. They made fantasy games and

imaginary worlds, and came to love what they had created. They put mana into play, making it part of their lives, dragging it into their histories and self-understandings. They spent hours optimizing their healing spells and living the lives of draenei shamans. Gaming became part of who they were, and mana became part of their heritage. Did they borrow it? Yes. Did they exoticize it? Perhaps. But by playing with it, they honored it. The world is full of stories like the story of mana, stories whose paths across cultures and through time are rarely fully recorded. But these stories matter to us, because their histories are part of our lives. Like mana, they lay in the background until—click—someone shines a light on them and we see the power they truly possess.

Many people helped with this article. I’d like to thank Jon Peterson, my coauthor on the academic version of this paper, for his scrupulous reading of this paper. I’d also like to thank Steve Perrin and Larry Niven for answering my questions about their work and career. Professor Robert Blust, the Reverend Terry Brown, and Michael Craddock reviewed the manuscript to make sure I got all my facts straight. Any errors are my own.

# NOT-SO-FUNNY PAGES

## Hawaii

by Jed McGowan

“There are scenes to which description, and even painting, can do no justice,” wrote William Ellis from the island of Oahu in 1825, remembering the sublime sight of a volcano. “To behold it without singular and deep emotion, demands a familiarity with the more terrible phenomena of nature which few have the opportunity of acquiring.”

In 2014, description and images still don’t do it justice—but they can try. Los Angeles-based artist and animator Jed McGowan, who released the wordless comic “Voyager” last year, has outdone himself with his second self-release about the formation and eventual destruction of the Hawaiian island chain. “I knew I didn’t want humans in the comic,” McGowan has said about his take on the *Voyager* probe, “but I still wanted something that was emotional, with a clear beginning, middle and end.” The same approach is in play here: McGowan offers up a sensitive visual narration of the natural forces that shape a landscape, humanizing a process that is almost inconceivable in its immense temporal and geological scale.

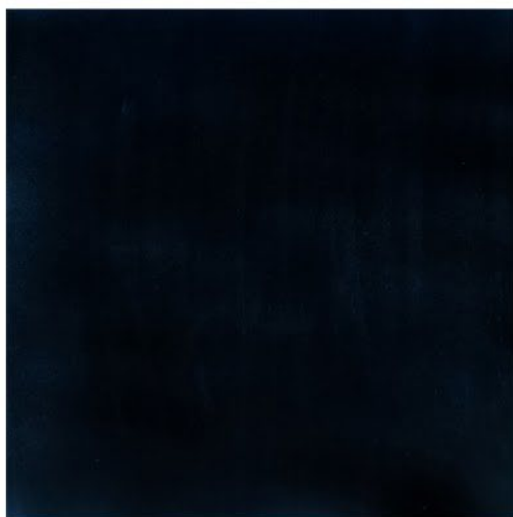
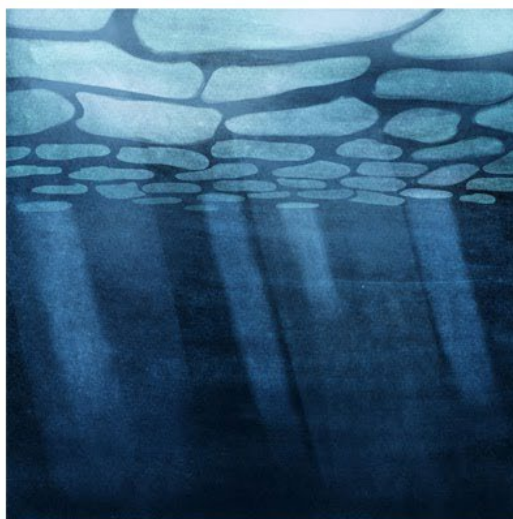
McGowan points to the long tradition of story-telling and historical narrative in the physical sciences, and to a lineage of scientific illustrators that stretches back to the Victorian era. For the “Bodies” issue, we decided to highlight the panels from “Hawaii” which visualize the corporeal forms of the earth itself—the vast tectonic plates and oceans of magma that give our planet a corporeal shape and substance. As McGowan shows, even these impersonal forces have stories to tell.



View “Hawaii” in full at McGowan’s personal site:  
<http://www.jedmcgowan.com>



# 500,000 YEARS AGO











# 450,000 YEARS AGO





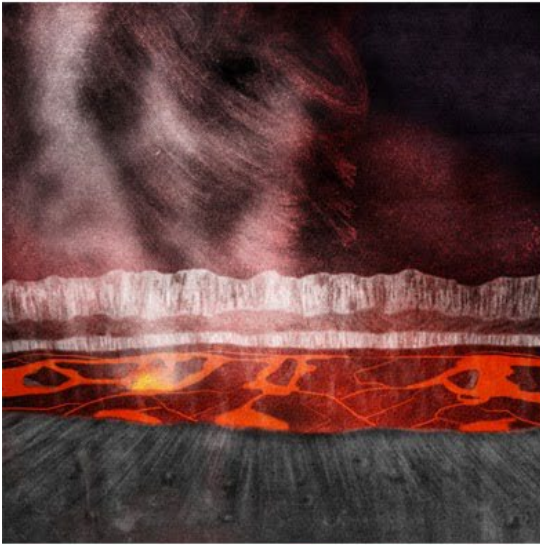
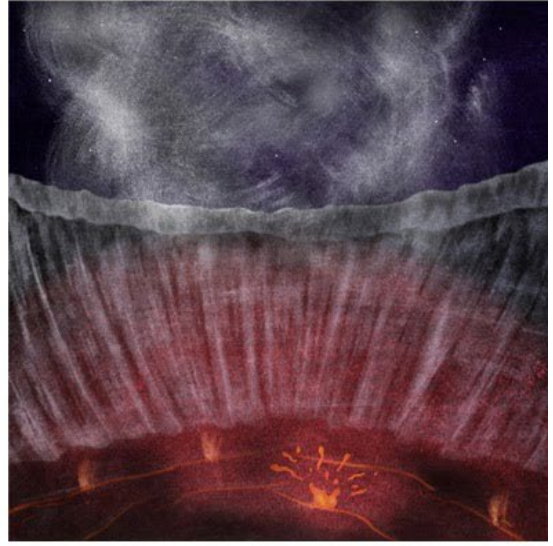
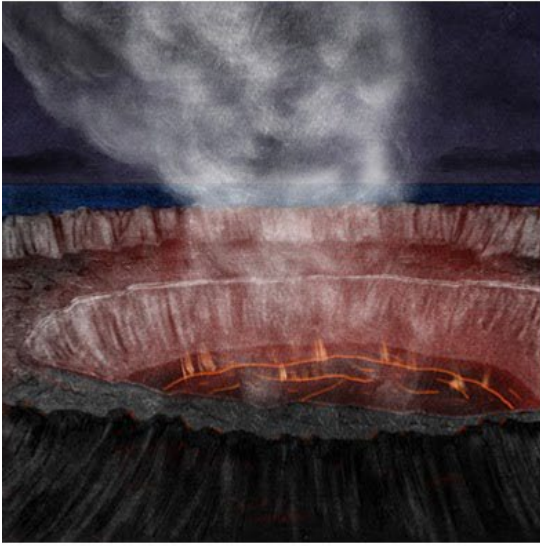




# 425,000 YEARS AGO











# Angelica's Baby: Pregnancy Narratives in Twentieth-Century Rio de Janeiro

by Cassia Paigen Roth



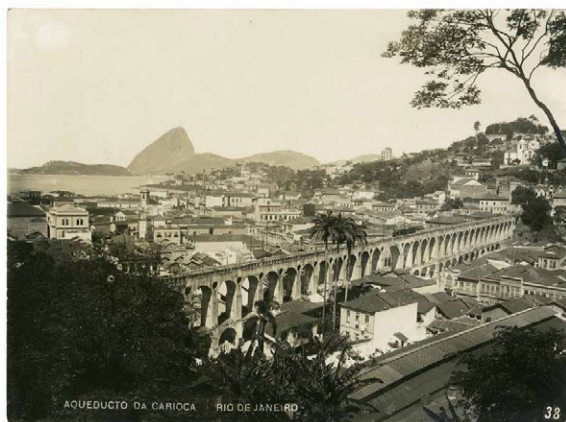
On the morning of December 22, 1911, in the height of the Rio de Janeiro summer, Angelica de Lourdes felt sharp pains in her stomach. A sixteen-year-old migrant from Northeast Brazil, she worked as a nanny and lived in the home of her employer's mother-in-law, in the current-day Maracanã neighborhood of Rio de Janeiro. Not feeling well, Angelica went into her room to lay down, and a doctor was brought in. After examining Angelica, he decided a midwife should be called as the girl was in labor. By the time the midwife arrived, however, Angelica had already delivered a dead newborn—it sat wrapped in blankets on top of the bed. The midwife noted bruising around the child's neck and mouth. She believed the marks to be the signs of a violent death, and she voiced her suspicions to Angelica's employer, Dr. João Baptista, who, it seems, then notified the police.<sup>1</sup>

The police brought Angelica in to the neighboring precinct for questioning mere hours after her exhausting delivery and the subsequent loss of her child. In her statement, Angelica declared denial not only of her pregnancy but also of the cause of her labor pains—that is, until she delivered and saw the actual child. She told the police that she had been “violently raped” by her employer's gardener exactly nine months earlier. The gardener, Antonio de Almeida, confirmed that he was the father of Angelica's child. Yet, Antonio described the rape in less violent terms than Angelica. In his eyes, he had “deflowered” her and had planned

to repair the damage to Angelica's honor through marriage. Several months after the rape, Angelica “noted that her belly was growing little by little [but] because she did not know the signs of pregnancy, she was unaware that she was pregnant.” Angelica's fellow domestic servants also cited ignorance of Angelica's physical pregnant state. For example, one witness stated she “was unaware that the minor [Angelica] was pregnant, judging that the growth of her belly was fat.”<sup>2</sup>

Angelica's denial continued well into her labor. She testified that on the day she gave birth, after lying down because of the pain, “she observed a phenomenon to her unknown and that it consisted of a large volume of liquid falling from her sexual organs and after [that] she felt that organ dilating and out of it came a volume, that at the beginning, she did not know what it was but after she saw that it was a child.” Angelica's account rings rather formal and distant if we consider the intense physical experience of labor and delivery. Her testimony was clearly mediated by her police questioners and translated into an “appropriate” tone that fit into the burgeoning technical investigative tradition of the Brazilian civil police. This official mediation erased Angelica's physical and mental experience of labor and delivery. It dulled down the pain, fear, and surprise that probably consumed Angelica for the sake of bureaucratic expediency.

The subsequent police investigation tried to understand if Angelica was guilty of infanticide—the willful killing of her newborn infant after giving birth—or if the infant had died due to the conditions in which Angelica had delivered the child. Despite the medical attention Angelica allegedly received both before and after the delivery, she gave birth alone in her room. Angelica's employer, it seems, did not send anyone to help her while the midwife was on her way. After noting that Angelica was unwell, the cook had asked the girl through the closed door if she was feeling okay, and after hearing the affirmative, “she [the cook] returned to cooking and taking care of her duties.” Domestic life continued as usual in the home where



View of neighborhood next to the home where Angelica worked as a nanny, circa 1910.

Aqueducto da Carioca, Rio de Janeiro. Photograph album collection, Department of Special Collections, Charles E. Young Research Library, UCLA

The pregnant woman's weight seemed to be a factor in other people's alleged denials.



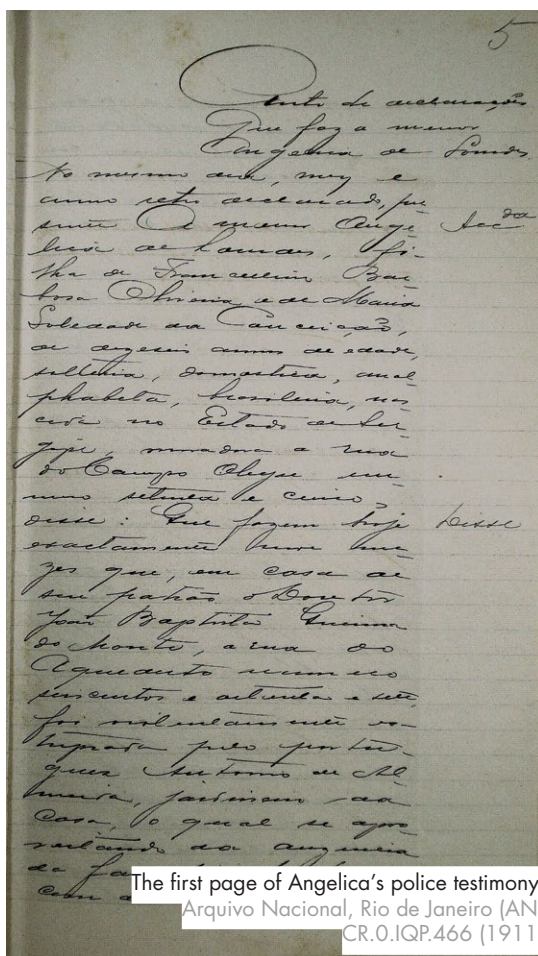
Angelica lived. Angelica's delivery was perhaps no more pressing than that day's supper.<sup>3</sup>

The police's forensic specialists' autopsy of the infant declared that the newborn had been born alive and had died within thirty minutes, but not from manual strangulation as the midwife initially suspected. Instead, they cited the cause of death as a skull fracture and a consequent internal brain hemorrhage. Angelica told investigators that during the delivery and after she had seen the child's head, she had "in the desperation of pain ... guided her hands to the area to grasp the child, [and] forced its delivery and let it fall to the floor." After passing out briefly, Angelica came to and "noted that the child was dead, not knowing if the death occurred in the moment in which she forced the exit of the child or if it was in consequence of the child's fall after its birth." Angelica presented her supposed denial of her pregnancy and the subsequent ignorance of "how to give birth" as the reason behind the newborn's death.

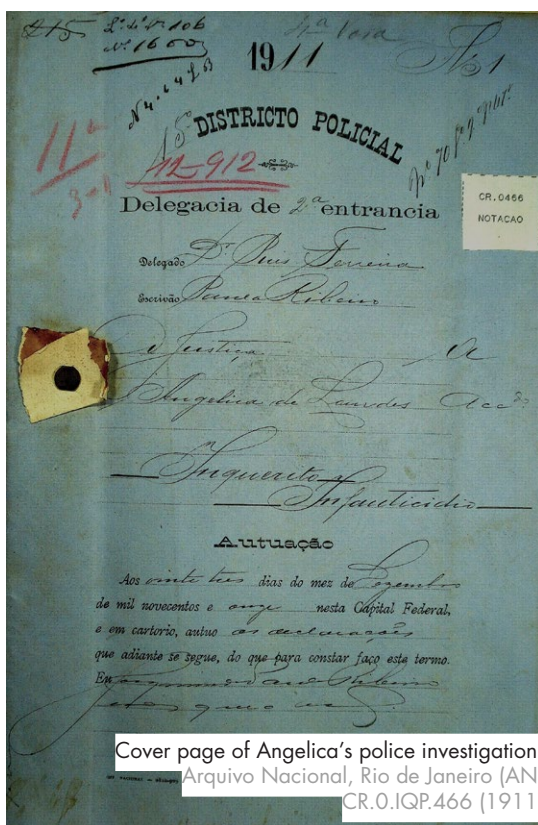
## How I Met Angelica: Police Investigations in the Archive

I first met Angelica in the National Archive in Rio de Janeiro, Brazil, while researching the lives of women investigated and prosecuted for abortion, infanticide, and child abandonment. I found Angelica's testimony among numerous other cases involving women in similar situations. Reading through her police investigation caused me to ponder the interconnectedness of difficult home births and possible infanticide charges. Her (non) experience of pregnancy and labor unfold among the yellowed pages of police-guided testimony, forensic exams, and judicial decisions. Angelica's police investigation consists of thirty-four double-sided handwritten sheets of faded paper with smudged ink. In its pages, the police question Angelica's employer, the midwife who arrived after the birth, Angelica, the gardener who raped her, and two other women who worked in the same home.

Two forensic exams also appear in the case: an infanticide autopsy on the infant and a pelvic exam—called a "birth exam"—on Angelica that determined she had recently given birth. Angelica's reproductive life is narrated and re-narrated



The first page of Angelica's police testimony.  
Arquivo Nacional, Rio de Janeiro (AN)  
CR.O.IQP.466 (1911)



Cover page of Angelica's police investigation.  
Arquivo Nacional, Rio de Janeiro (AN)  
CR.O.IQP.466 (1911)

Although heavily mediated by the police—all testimony and questioning were recorded by police clerks—these cases provide glimpses into women's experiences with pregnancy at a time when little is written about the subject and even less is discussed about the lived experiences of the women involved. But there is a certain risk in reading criminal sources involving cases of pregnancy and supposed or attempted fertility control, here in the form of a possible infanticide. We must be careful not to *only* assume the criminality of the woman in question or chalk up her supposed ignorance as a tactic to avoid prosecution. To be sure, there were cases of infanticide and supposed ignorance that, in all likelihood, were calculated attempts by women in the face of the police. But feigning ignorance was not the only form of asserting one's will. Every kind of historical source has its limitations, as these dry and technical police reports certainly do. We cannot limit our understanding of women's lived experience of reproduction because of such restrictions. Unfortunately, historical information about the experience of pregnancy, childbirth, and newborn deaths that *includes women's voices*, however mediated, are often only found in criminal documents.



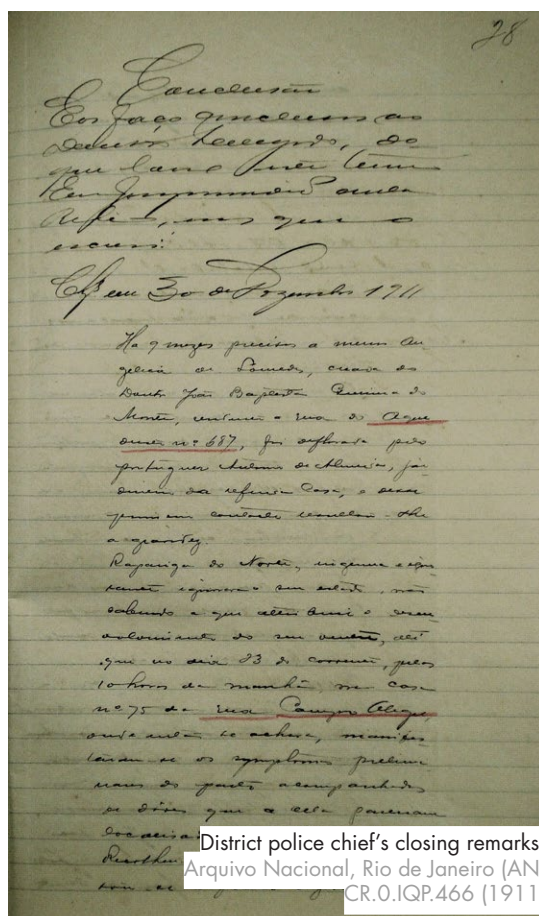
While other sources such as medical dissertations and journals may describe childbirth from the physician's point of view, they include women as objects of study and not as protagonists in their own reproductive lives. Moving beyond reading Angelica's experience as criminal allows us to explore her reproductive denial and its outcomes as one of the many possible and probable physical realities of pregnancy and childbirth.

## Case Closed

The police took a sympathetic view towards Angelica's plight, an opinion that might have stemmed from her supposed virginity at the time of her rape, her lower-class status—demonstrated by her illiteracy, migrant condition and occupation—or the other witness testimony that did not support the hypothesis of infanticide. The district police chief in charge of the investigation cited that Angelica's denial of her pregnancy stemmed from ignorance and not criminal intent. He wrote in his summary remarks: "A young girl from the North, naïve and ignorant, unaware of her [pregnant] state, did not know what was causing the growth of her belly." He re-narrated the events of Angelica's pregnancy, without changing her story. He described that when she began to feel the initial pains of labor, she went to her room where her water broke, and "a large body came out of her sexual organs that she did not know what it was." "Agitated," she grabbed the infant by its head to help with delivery, causing its skull fracture and subsequent death. The verdict in the eyes of the district police chief: involuntary infanticide. The public prosecutor, representing the state, corrected the police chief's view, stating that there was no such thing as involuntary infanticide, as the criminal intent to kill was the key component to the crime. In fact, the charge was involuntary manslaughter for which Angelica was also found not guilty. The public prosecutor closed the investigation without going to trial. Angelica's social circumstances initiated the police investigation, but they also mediated its outcome. All levels of the law saw Angelica's lack of knowledge as definitively linked to her poverty, and as the reason the death of her child was not a crime, reiterating Angelica's own assertions.<sup>4</sup>

## Maternalism

Beginning in the nineteenth century, Western society assumed that women had an intuitive sense of their bodies, which, when dealing with the issue of pregnancy inherently tethered them to their latent maternal instincts. Thus, in turn-of-the-twentieth-century Brazil, the police employed poverty and its supposed counterpart, ignorance, to explain the paradox of pregnancy denial in a maternalist culture. But a similar disconnect between the practice of infanticide and women's "inherent" maternal nature existed. In fact, early-twentieth-century Brazilian infanticide law assumed a level of psychotic disturbance in the women involved. In the 1890 Penal Code, in place until 1940 and under whose laws Angelica was investigated, the crime of infanticide was the direct or indirect killing of a child in the first seven days of life. However, if the mother of the child committed the crime to hide her own "dishonor," the



District police chief's closing remarks.  
Arquivo Nacional, Rio de Janeiro (AN)  
CR.O.IQP.466 (1911)



prison sentence was reduced from the original six to twenty-four years to a lesser sentence of three to nine years. While the infanticide law did not include a specific mention of psychoses, in practice, juries often acquitted women brought to trial for infanticide for acting in a state of post-partum madness.<sup>5</sup>

This practical application of the law was encoded in the very definition of the crime in the revised 1940 Code. In effect to this day, the 1940 Code states that infanticide is a crime that only the child's mother can commit: "Infanticide: To kill, under the influence of the puerperal state, one's own child, during the birth or immediately after." This change codified in law the idea that only a woman in a state of post-partum "madness" could effectively kill her child. In other words, a rational woman could not reject motherhood in such a violent manner. Moreover, the 1940 Code erased any reference to "honor." While the 1890 Code had a reduced prison sentence for women "hiding their dishonor," the 1940 Code rejected the idea that a woman would rationally kill her newborn to hide her dishonor. After 1940, only complete madness explained the event.

While infanticide and the denial or concealment of pregnancy are different events (although at times the former follows the latter), they both fly in the face of the logic of a maternalist society that reduced a woman's nature to her biological ability to reproduce. Investigations of pregnancy denial at the turn of the twentieth century remedied the paradox of its existence by citing ignorance. Infanticide law similarly rectified the inherent contradiction between a woman's nature and the act of infanticide through the idea of madness.

## A Twenty-First Century Angelica?

Contemporary scholars have shown that the denial of pregnancy can precede infanticide. But denial or concealment of pregnancy did not and does not always imply infanticide, and in current-day literature, this connection only exists in a small percentage of denial cases. Nevertheless, neonaticide (killing a child immediately after birth) remains "strongly associated with pregnancy denial." Currently, denial of pregnancy is classified into three categories: affective, pervasive and psy-

chotic. Women in affective denial intellectually recognize their pregnancy but do not change their behaviors. Pervasive denial is "when not only the emotional significance but the very existence of the pregnancy is kept from awareness." Empirical evidence suggests that physical symptoms associated with pregnancy are milder in women with pervasive denial. Women with pervasive denial can also feel dissociated during the actual delivery, much like Angelica. Psychotic denial includes women who deny pregnancy in a delusional manner. While the first two categories often include the concealment of pregnancy, psychotic denial normally does not. Angelica's alleged lack of knowledge falls in line with current definitions of pervasive denial.

Cases of denial and concealment of pregnancy today are not uncommon occurrences. Anyone who has watched TLC's reality show, "I Didn't Know I Was Pregnant," can attest to their existence. Empirical data has demonstrated that popular ideas about denied pregnancies as rare events are not true. Yet in the contemporary popular imagination, women who state they did not know they were pregnant are seen as lying, as the prevailing belief is that it is impossible to not know one is pregnant. Contemporary society expects that women, whether experiencing a first or sixth pregnancy, will know that they are pregnant. This knowledge is assumed to be an essential part of women's identity and makeup. Legal battles in the U.S. today over the pregnant body play on maternalistic assumptions. A recent case in Texas demonstrates how the law can be interpreted to imply that even a brain-dead pregnant woman should be kept on life support in order to fulfill her maternal duty and deliver her child. The contested nature of the female body—in particular the visibly reproductive one—continues to be waged through its embodied experiences.

If we move backwards in time and across continents, we see that maternal claims also played a key role in legal interpretations of cases like Angelica's. And while the medical "truth" of a woman's inherent maternalistic instinct was reiterated in legal and political understandings of their "natural" roles as mothers, at the time of Angelica's investigation there was some wiggle room in the Brazilian legal understanding of pregnancy

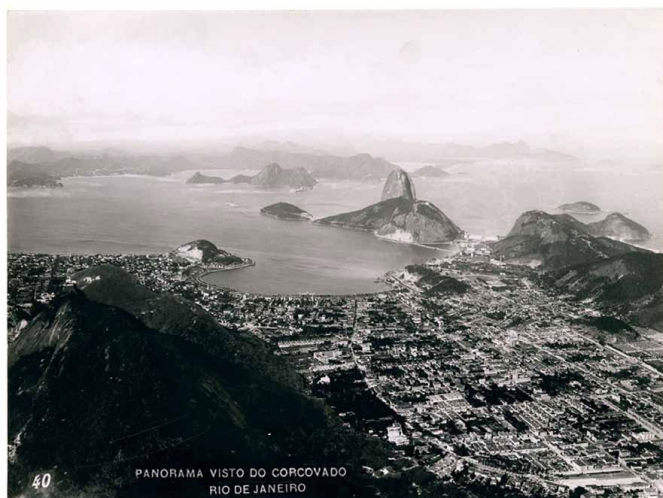
experiences. Despite the rise of maternalist thought, Angelica's case demonstrates that the practice of early-twentieth-century Brazilian law still allowed for the possibility of pregnancy denial. Even though the legal and medical exaltation of motherhood had gained full force in Brazil in the early-twentieth century, evolving into a belief in scientific motherhood influenced by the growing hygiene and eugenic movements, the law still carved out a space for women's empirical pregnancy experiences.

I find myself wondering what happened to Angelica after the end of her police investigation. The archival documentation stops, but Angelica's life continued on. Did she stay on as a nanny in the home of Dr. João Baptista? Did she marry her rapist Antonio de Almeida? Did she become pregnant again and have children? Angelica's traumatic encounter with the police may be the only documentary evidence she left behind, but her story allows us a glimpse into the reproductive lives of many women in early twentieth-century Rio de Janeiro. It remains etched into my mind as an example of the importance of the physical body—of Angelica—in our understanding of history, the archive, and continued contestations over female reproduction.

## Notes

1. The following discussion is drawn from Angelica's police investigation, found in the National Archives in Rio de Janeiro, Brazil. Arquivo Nacional, Rio de Janeiro (AN) CR.o.IQP.466 (1911). All National Archive records cited hereafter as (AN) followed by the citation. All translations are mine unless otherwise noted.

Angelica was the nanny of Dr. João Baptista, but she lived in the home of João Baptista's mother-in-law at Rua Campo Alegre, 75 (current-day Rua Ibituruna in the Maracanã neighborhood). For information on the street's name change see, Roberto Macedo, "Efemérides Cariocas," *Revista do Instituto Histórico e Geográfico Brasileiro*, 320 (1978): 286. Dr. João Baptista lived at Rua do Aqueducto



View of Rio de Janeiro from Corcovado, circa 1910.

Panorama Visto do Corcovado, Rio de Janeiro. Photograph album collection, Department of Special Collections, Charles E. Young Research Library, UCLA

[sic], 687 (current-day Rua Almirante Alexandrino in the Santa Teresa neighborhood). For information on this street's name change see, Lysia M.C. Bernardes and Maria Therezinha de Segadas Soares, *Rio de Janeiro: Cidade e região* (Rio de Janeiro: Prefeitura da Cidade do Rio de Janeiro, 1987), 107.

Janeiro (AN) CA.CT4.o.492 (1908). Even when Article 27§4 was not specifically referred to, the “privation of the senses” argument was advanced by the police, lawyers, and the women themselves.

2. “To deflower” and “to rape” were two different crimes under the 1890 Penal Code, and deflowering was specific to a minor. Article 267, “To deflower a minor woman through seduction, deceit or fraud,” was punished with one to four years in prison. Article 268, “To rape a woman, virgin or not, but honest,” was punished with one to six years in prison. Prison time was reduced to the period of six months to two years if the raped woman was a prostitute. On the meanings of honor in deflowering cases see Sueann Caulfield, *In Defense of Honor: Sexual Morality, Modernity and Nation in Early-Twentieth-Century Brazil* (Durham: Duke University Press, 2000).

3. Article 298 of the 1890 Penal Code established the crime of infanticide as: “To kill a newborn, this is, an infant, in the first seven days of its life, by employing direct and active methods, or by refusing the victim the necessary care for the maintenance of life and to impede its death. Sentence: prison time of six to twenty-four years. Sole exception: If the crime was perpetrated by the mother to hide her own dishonor. Sentence: prison time of three to nine years.”

4. Article 297 of the 1890 Penal Code stated “He that, by imprudence, negligence or inexperience in their art or profession, or by the inobservance of any regulating provision, commits, or was the involuntary cause, directly or indirectly, of a homicide, will be punished with prison time from two months to two years.”

5. Article 298 could be combined with Article 27§4 of the 1890 Penal Code. Article 27§4 stated, “The following are not criminal: Those who are found in a state of complete deprivation of the senses and intelligence in the act of committing the crime.” For example, the defense lawyers of Gloria Lourenço Silva employed Article 27§4 of the 1890 Penal Code to argue that Gloria was not in her right mind when she decapitated her child. The jury acquitted her. Arquivo Nacional, Rio de





So what really drew me to telling a story setting in the time of the Philadelphia Yellow Fever outbreak was that it rather naturally presented opportunities for exploring the human side of the history of medicine by exploring the themes of duty, compassion, uncertainty, and fear. I wanted readers to think about the history of medicine in the context of a situation in which human reason seemed to be breaking down in the face of the unrelenting force of nature. Because to me, exploring these moments really helps us to question and to understand the kinds of things we as a society must do to prevent those kinds of breakdowns in the future.

### What suited it for this very particular format?

I think the great thing about setting this story in the midst of an epidemic is the fact that it places the reader into a story that is likely to be foreign to him or her in the particulars, but yet the situation isn't so unfamiliar that it wouldn't still resonate with a contemporary audience. It's foreign in the sense that most people living in the U.S. today just don't have any memory or experience with epidemic diseases. But even though we've conquered many of the particular diseases that were so frightening for so much of human history—like smallpox and yellow fever—the threat of epidemic disease certainly hasn't gone away. So I definitely believe it's worth thinking about just how far we have come and what a luxury it is not to live in fear of these particular diseases today, but also, to understand just what the experience of epidemic disease was like, because we're not really out of the woods, so to speak.

Another reason I really like the setting of the yellow fever epidemic was the fact that it presented a lot of possibilities for horrible ends for the player/reader. Perhaps that sounds a little trite at first, but when you're trying to construct a work that is more game than linear narrative it's actually quite important to have a great many ways to reasonably conclude each of the various story lines. Player actions need to have consequences so that each choice doesn't just seem important, but actually is important. And of course the most obvious consequence you can throw at a reader/player is their character's death. So the opportunity for a lot of gruesome, but plausible, ends really helps to add

a sense of importance and urgency to the choices a player can make.

### How can interactive formats, or games, bring different experiences to bear on history?

In some ways, I'd say this question almost answers itself. It's precisely because games allow us to *experience* history that they have such rich potential. Some people can read about historical places or events and naturally start imagining that landscape and constructing their own personal narrative of moving through that landscape, but most of us have a hard time doing that. Most history books, be they textbooks or academic monographs, are very flat. They're not about individual human experiences; they're very abstract. And they demand quite a lot of their readers. They essentially say "hey reader, you have to be already invested in what I'm about to tell you, because I'm not going to help you connect to this material on any kind of personal or emotional level."

Now, that kind of abstraction can certainly lead us to interesting and valuable insights into the past, but it also makes history seem like it's not about people, when, on the contrary, history is all about people. I see games as having the power to help us get back to that idea that history is someone's lived experience of the past. Players aren't simply told about a world or a moment, they get to explore that moment and even participate in it. And even if the personal story they end up creating diverges from any known historical realities, it still gives the player that hook for exploring the world further. Now that they've experienced some possible outcome, they have an incentive to start asking, "what are the other possibilities?"

It's that unique combination of narrative and choice that can provide a really great platform for generating questions. And once that curiosity is fired up, at some point, you'll likely find that don't need the game anymore to be interested in history. You already have some context laid down for understanding those abstract texts. I guess you could say that I see games as having the power to be a kind of gateway drug that ultimately leads us into taking learning into our own hands!

## What does ‘objective’ history miss?

I hinted at this a little bit in the previous question, but I think one of the weaknesses of professional historians’ focus on creating really detached, “objective” histories is that they end up omitting the human aspect of history. History is fundamentally a collective narrative of real human beings’ lived experiences, yet so many people see it as this dry and distant place that’s totally unfamiliar compared to our own lives and the world we live in now.

The problem is that we often only know “the facts” of an historical event: we know that someone gave a speech and we know what that speech said, or we know that bombs were dropped in a specific place at a specific time, or that a gene or virus was discovered by a particular person or lab. But rarely do we know anything about the thoughts or emotions of the people involved in those moments. And for obvious reasons, professional historians aren’t in the business of speculating or taking guesses when they have no evidence at all. Of course, that’s a very responsible way of dealing with this issue, but it’s still problematic: just because a history is objective insofar as it doesn’t speculate beyond what’s in the source material doesn’t make it a faithful representation of the past. Instead, what we’re really doing is painting a picture of the past using only one color instead of a full palette. The picture is not necessarily inaccurate, but it’s definitely incomplete. And in that respect, it simply can’t be the only way we approach doing history.

Again, this is where games can really help to fill in the bigger picture and marry the facts of the objective portrait with the narrative of personal experiences that we’ve since lost. Games give players a freedom to speculate, to imagine, and to recreate and relive the emotional and personal experiences that conventional histories must necessarily shy away from. And it’s only through that historical imagination that I think we can bring ourselves closer to having true knowledge and understanding of the past.

And an understanding of what it’s like to die in a snake pit! What we at *The Appendix* love about “The Fever” is that it’s not just interesting, and empathetic, but it’s also unexpectedly funny, and captures the spirit of those great ‘counterfactual’ fictions, *Choose Your Own Adventure*. Did you have a personal favorite, growing up?

Funny that you should bring up the snake pit—that scenario is the only part of my story that wasn’t actually my idea at all! I was telling some friends about this project, and their first question to me was “does it have a snake pit? These stories always have to include a snake pit!” But I was very resistant to anything like that at first, mainly because I don’t recall having a favorite story *Choose Your Own Adventure* story, but I do vividly remember how frustrated I would get when a scenario became overly absurd. Like when you would get to one of those moments when you can sense you’re about to make a life or death decision, but the story hadn’t given you any context for making a good decision. And if you’re me, when you get to that point you’re thinking to yourself, “neither of these choices makes any sense! Why can’t I just run away?”

But I eventually came to realize that silliness and absurdity does have a place in these kinds of choice-driven narratives. The trick is figuring out when and how to bring in that playfulness in and when to play it straight. If you let whole scenarios become too bizarre, then yes, it can easily become frustrating to readers because they don’t feel in control of their character’s fate anymore. But game designers know that people love surprises, and the best games are the ones that know when to bend or stretch the rules just a little to create those little unexpected twists. If done right, those surprises are the very thing that keep us coming back for more. So now I’m completely sold on the idea: always have a snake pit! QED.

Read the interactive story:

<http://theappendix.net/special/the-fever>



